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Treatment of Surgical Shock and Embolism*

FREDERICK M. ALLEN, M.D., F.A.C.S.
NEW YORK, NEW YORK

A PAPER of limited length can undertake no more than to summarize the recent changes in treatment of surgical shock and embolism. The unusual distinction of the International College of Surgeons in preserving the rare privilege of medical free speech and publication without censorship or suppression furnishes an opportunity for a frank discussion. Practitioners have not as yet received a clear general statement of the revolution which has occurred in this domain. Not infrequently, powerful individual and institutional interests oppose a change which is so radically subversive of established positions, but today many human lives depend upon the development and utilization of knowledge in this important war problem. Therefore, it is urgent that the plainest possible account of facts be submitted to the judgment of the medical profession.

In introduction, primary and secondary shock should be differentiated. Primary shock is of nervous origin, located in the arterioles, characterized by vasodilatation. Secondary shock is of metabolic origin, located in the capillaries, characterized by vasoconstriction. The word shock alone ordinarily signifies secondary shock, because of its predominant importance. Its symptoms of retarded circulation, hemoconcentration, oligemia, anoxemia and tissue anoxia furnish only a superficial definition, but at least distinguish it from primary shock and establish it as a clinical entity in spite of variability in different types and different individual cases. As a practical illustration of the distinction, it was surprising that in meetings last summer in Chicago the prevention of hypotension by adrenaline or ephedrine injections during spinal anesthesia was compared with refrigeration for prevention of shock. Refrigeration prevents not only primary shock of this kind, but especially secondary shock. There is no nervous factor in secondary shock. The blocking of nerves or of the spinal cord has not the slightest influence to prevent this shock. Vasoconstriction being already present in secondary shock, vasoconstrictor drugs are not only valueless but injurious. Spinal anesthesia may add to the danger of shock, but it has no resemblance to refrigeration in the prevention of shock and the resulting operative mortality.

Next is the combination of theoretical and therapeutic misconceptions in regard to the adrenal cortex, because of the superficial resemblance between adrenal cortical deficiency and shock. Clinical and experimental proofs have finally demonstrated that adrenal cortical extract or desoxycorticosterone acetate is worthless in shock. The few favorable reports seem explainable by failure of the authors to make sufficient allowance for the benefit of the salt solution administered with the hormone. It is only regrettable that so much work was wasted on a hypothesis which ignored long-known facts. Stewart and Rogoff

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proved a generation ago that animals can survive complete removal of the adrenals for a week or more. Hence, shock which may kill in a few hours cannot be due to adrenal deficiency. The argument that shock may create an extra need for cortical hormone, or that an added supply of the hormone may help to overcome shock, encounters the fact that the superficially similar conditions are really opposite. The superficially similar escape of fluid and electrolytes from the blood is due to opposite directions of permeability in the two conditions. In adrenal deficiency, fluid and electrolytes pass from the tissues into the blood and out through the urine. In shock, diuresis is inhibited while fluid and electrolytes pass from the blood into the tissues. Corresponding to these facts, my experiments gave the impression that small doses of adrenal cortical extract are useless and large doses aggravate shock.

The related theory of potassium intoxication has also attracted an amount of attention which appears unfortunate in the light of the most rudimentary facts. English studies have revealed that the so-called crush injuries involving extensive masses of muscle may sometimes flood the body with considerable quantities of potassium. This may be viewed as a special complication, on a par with the renal intoxication in such cases, because there is sufficient proof that in typical shock the elevation of serum potassium is slight or terminal and mostly explainable by simple hemoconcentration. Among the elementary facts which should have prevented the setting up of this hypothesis are the following: (a) According to textbooks, potassium kills by stopping the heart. But death in shock regularly occurs by apnea, while the heart continues beating until stopped by anoxia. (b) The animal, and presumably the patient, in the very act of dying from shock can be restored, at least temporarily, by injections of saline solution or whole blood, but in potassium poisoning at such a stage nothing avails. (c) Potassium poisons not by absolute dose but by concentration. An overwhelmingly fatal injection of potassium becomes harmless if it is sufficiently diluted with a solution of a sodium salt. The body readily tolerates sufficient saline administration to relieve any threatening rise of blood potassium, but the severest shock cases are not thus saved.

Of more practical interest is the use of anesthetics and narcotics in shock. Although apathy and insensitiveness are characteristic of advanced shock, the wound which originally causes shock may be accompanied by such pain that morphine is given routinely, or the patient may need an operation under anesthesia. On the other hand, there is familiar proof that shock lowers resistance to such drugs, and conversely, anesthetics or strong narcotics reduce resistance to shock. Furthermore, as already mentioned, there is no nervous element in secondary shock, and blocking of nerve impulses does not arrest shock. A preponderant fact, however, is that exhaustion due to pain, restlessness, anxiety, etc., reduces resistance more than any of these drugs. Therefore the customary use of morphine and of anesthetics is not only a humanitarian necessity, but actually assists toward recovery under usual conditions. Anesthetists are aware of the dangers, and their skilled selection of agents which are least detrimental in shock cases need not be discussed here. Evidently the best anesthetic, when feasible, is refrigeration, which not only does not increase shock but helps to arrest it. Also the advantages of cold for simple sedation should be pointed out. For example, burns are one of the causes of shock

accompanied by severe and prolonged pain, and their superficial location makes them accessible to cold treatment not only on the limbs but also on the trunk. One of the striking features is the transformation in appetite, spirits, strength and general condition when pain is controlled by temperature instead of by morphine, and only a person who has witnessed this contrast can appreciate the harm that narcotics produce along with their benefits.

Omitting many surgical details which are established and familiar, we may pass now to the essential treatment of shock aimed at the nature of the process. Shock being such a large military problem, a historical landmark was the study of the governmental Shock Committee in the first World War. The unmixed errors of their report have been publicized as an epoch-making achievement; they have been adopted in all standard textbooks, and the same combination of political, financial and academic authority is manifest under the present Office of Scientific Research and Development. The entire findings of the Committee—the dominant status assigned to the plasma proteins and colloids in general, the alleged uselessness or harmfulness of crystalloid solutions, the introduction of gum arabic without proof of benefit or exclusion of danger, the emphasis on plasma colloids rather than corpuscles even for hemorrhage, the supposed proof of intoxication in shock, the doctrine of irreversibility, the approval of heating shocked patients—everything was wrong and turned research backward for a generation. Independent investigation, after much difficulty and delay, has restored forward progress scientifically but has not yet succeeded in reforming treatment, especially in the governmental and military services. Advocates of centralized planning and control should take note of this example.

To show that this sweeping condemnation is not arbitrary or personal but is necessary for clearing the ground of prevailing fallacies, it is necessary to consider the two theories of shock on which ideas of treatment are based. First, it is undisputed that the experiments by which the Shock Committee supported the toxic theory were wrongly performed. In correcting them, Phemister, Blalock and their followers rushed to the opposite extreme of the pure physical theory, which is probably equally erroneous. It may be stated fairly that the weight of evidence and opinion now favors two factors in shock, namely a physical factor of fluid migration and a chemical factor in the form of unidentified tissue toxins. Rational treatment is then directed against either of these processes.

I. CONSERVATION OF BLOOD VOLUME

Proof of the importance of the physical factor is that death may undoubtedly be caused by depletion of blood volume and may sometimes be prevented by conservation of blood volume. The migration of fluid through vessel walls which is characteristic of shock may be complicated by hemorrhage, namely an escape of whole blood either externally or into the tissues. Rational treatment here consists in either preventing or replacing the fluid loss.

Saving fluid loss. The local saving of fluid becomes more logical in the light of the recent demonstrations that the abnormal vascular permeability is limited to the injured region; there is not an increase of capillary permeability throughout the body as was quite widely taught. Therefore, oozing from large surfaces, especially in burns, has been checked by tannic acid and other occlusive dressings, and there has been more recent emphasis on pressure bandages

or casts to limit swelling of injured limbs. There is definite proof that such measures may sometimes suffice to prevent fatal shock. On the other hand, as the first praise of the tannic acid covering of burns was followed by its abandonment because of detrimental local effects, a warning may be proper regarding the present enthusiasm for tight limb dressings. It is an inescapable physiologic law that pressure is harmful to tissues. Even normal limbs are notoriously subject to gangrene if the swelling is too great or the bandaging too constrictive; but with damaged tissues the increased danger of necrosis and infection from the heat and pressure of dressings and casts is theoretically inevitable. Sulfonamides and penicillin may control infection but not devitalization. Since refrigeration is so vastly superior to occlusive treatment for burns, it may prove similarly superior to pressure dressings for limbs; or at least it may be used as a supplement to reduce pain, swelling and other consequences.

Replacement of fluid. Fluid injections to maintain blood volume hold the most important place in shock treatment. The benefit of saline infusions was recognized since their first use for Asiatic cholera in 1831, and they later were extensively adopted for other forms of shock. Then came the first World War with its academic-governmental condemnation of crystalloids and exaltation of colloids, and the most dismal record is the long series of ostensible confirmations in all the approved laboratories and by all the reputed authorities for twenty years afterward. Except for the monopoly of funds and facilities, my work which was published in 1939 would not have been so limited and could have been finished several years earlier. The essential fact is that the individual research which with trepidation I ventured to place in opposition to the regimented doctrines backed by such vast governmental and institutional resources was confirmed by subsequent workers, and no one reading the most recent literature can doubt that the specific need of the organism in shock is for water and sodium salts, not for plasma or any other colloids. (*Cf.* Katz, Friedberg and Asher;[15] Mylon, Winternitz and de Sütö-Nagy;[24] Parkins et al;[26] Scott, Worth and Robbins;[30] Rosenthal.[29])

Several details in the practical application of these scientific facts can now be considered.

(1) Rosenthal,[29] confirming my finding that salt solution is superior to plasma (even in equal volumes) for shock treatment, has added a new feature, namely, the advantage of administration by mouth as far as feasible. He also discovered the special suitability of sodium lactate for this purpose. Fox[14] has applied this principle to the treatment of burns with results apparently superior to any ever obtained with plasma. The preference for sodium lactate is based on convenience for oral administration and other minor advantages, and any physician not having the lactate solution available can anticipate essentially the same results with simple physiologic saline.

(2) Salt solution is inferior to plasma for hemorrhage, but even here it has far greater value than heretofore believed, and the tradition of its immediate escape from the vessels is false. If sufficiently large volumes are given, fearlessly replacing what passes into the tissues, an equilibrium is reached, so that the solution remains in the vessels and the circulating fluid volume is maintained. Thus, in an emergency, an acutely fatal hemorrhage can be compensated by saline infusions at least temporarily, within a very wide range, until the most extreme blood loss finally reaches a limit which makes pulmonary edema inevitable.

Rosenthal[29] and the Parkins-Lockwood[26] and Ivy-Dutton[18] groups agree with my findings on this point.

(3) The constancy of mistakes from the first World War persists not only in this, but also in the higher importance assigned to plasma proteins in comparison with corpuscles in treating hemorrhage. McKee and co-workers[20] have recently proved that a saline suspension of red cells is superior to plasma for this purpose. The ability of salt solution to maintain circulating volume is again illustrated.

(4) The great volumes of fluid frequently needed in shock are illustrated by Fox's customary administration of 7 to 10 liters (10 to 15 per cent of the body weight) in the first twenty-four hours of treatment for severe burns. Obviously there are states of circulatory weakness, cardio-renal-vascular disease and other complications which limit or contraindicate such fluid administration (Coller et al[9]). Ordinarily, however, in shock the massive quantities of salt solution are beneficial and safely tolerated, and one important point of superiority over plasma is that the latter is not only unavailable on such a scale, but also would be harmful or fatal in such volume.

(5) Many cases of shock, and doubtless the majority in military service, are complicated by hemorrhage. The advantages of plasma, therefore, are that it can be rather easily preserved and transported, and it serves a double purpose; it is an inferior substitute for salt solution in shock and an inferior substitute for whole blood in hemorrhage. However beneficial the present indiscriminate plasma treatment may have been, it lags behind the advance of research, which indicates that enormous quantities of plasma and an appreciable number of lives can be saved by intelligent selection of fluids, using saline massively for the acute crisis of shock and whole blood as far as obtainable for hemorrhage or anemia, and thus reserving plasma for its real uses, namely, as a partial replacement for hemorrhage and a secondary replenishment of plasma proteins after large or prolonged losses. Even for this latter purpose plasma can probably be granted only a subsidiary value, and writers who are fond of alarming figures of plasma protein losses in burns and wounds may be challenged to prove, first, that plasma is comparable with whole blood for treating anemia; second, that patients ever show injury from plasma protein depletion if anemia is prevented. The main criticism against the military services and their scientific advisers is that they are treating shock in this war on principles that were up to date in the former war.

II. TREATMENT TO COMBAT INTOXICATION

The fatal outcome of sufficiently severe shock in spite of the utmost fluid administration can scarcely be explained except on the assumption of a toxic factor. Such death is not due to irreversibility of advanced shock or to irreparable injuries from anoxia or other secondary disturbances. The dogma of irreversible shock, supported by all writers since the first World War, has been decisively disproved by the Levine Soskin group,[19] who used animals in hemorrhagic shock conforming to the criteria of irreversibility specified by Wiggers, and obtained permanent recovery by administration of sodium succinate together with restoration of blood volume. The specific action of the sodium ion is again emphasized. I had previously refuted this dogma with the demonstration that animals in the act of dying from traumatic shock could be saved and the principal symptoms reversed by infusions of physiologic saline or of whole blood, plasma being inferior as usual. Although such

animals often are enabled to survive for an entire extra day, they invariably die if the original shock was severe enough. These comparative results may be interpreted to signify that recovery is possible from the utmost hypotension, anoxia and other secondary processes, but death occurs from the one factor of true traumatic shock which is not reproduced in hemorrhagic shock, namely the toxin from wounded tissues.

No drug or other specific antidote for the hypothetical toxin or toxins of shock has been discovered. Bacterial products may be an important contributory factor but can scarcely be accepted as the true shock poison. Hence the demonstration (Aub et al,[4] Dze Fuh Pen,[11] Prinzmetal, Freed and Kruger[28]) of the remarkably rapid penetration and multiplication of microörganisms in injured tissues seems chiefly to emphasize the warning already given concerning the incubator action of dressings which retain heat and hinder circulation. There is interest in the painstaking studies of Green and Bielchowsky[5,9] identifying adenosine triphosphate as at least one of the long-sought shock toxins. The work of these authors and also of Noble[25] and Ungar[31] seems to prove the possibility of a considerable degree of immunization against shock. Theoretically, these results strengthen the toxic theory of shock, because an increased resistance against a mere circulatory change is less conceivable and becomes impossible if the claim of passive protection by a specific serum is confirmed. Practically, these findings apply only to prevention of shock, and there is no present hope of curing shock by an antiserum. There is reason to believe, however, that the training of soldiers by rough sports will develop general stamina and also increase resistance to shock.

The only known means of combating the toxic factor of existing shock is through temperature. The modification of temperature may be general or local.

Systemic hypothermia. The rectal temperature in shock may be normal or slightly above or below normal; but since the skin is usually cool the traditional treatment was to warm such patients with blankets or artificial heat. The pioneer in reform seems to have been Temple Fay.[13] Scattered clinical notes (Waters,[33] Perry,[27] Fay[13]) and precise laboratory studies (Elman et al,[12] Wakim and Gatch,[32] Cleghorn,[8] Green[17]) indicate that a cool environment and a moderate reduction of rectal temperature to perhaps 96° or 94°F. are most favorable. The difference between the harm of heating and the benefit of cooling may amount to the difference between life and death in some grades of shock, but in the severest shock, life may be merely prolonged and not finally saved. It also is not certain whether systemic hypothermia acts chiefly by reduction of toxin formation or by favoring peripheral vasoconstriction and reducing the tissue demand for oxygen.

Local hypothermia. The reduction of systemic temperature is applicable to all forms of shock, but is limited in degree. Local refrigeration is feasible only for limb wounds or superficial injuries (especially burns) of the trunk. The more radical reduction of temperature makes possible a more decisive arrest of the formation and absorption of tissue toxins. When an operation is contemplated a tourniquet should be applied and the limb chilled thoroughly to ice temperature, thus at once checking shock, hemorrhage, pain, infection and tissue devitalization. Such a patient is also ready for immediate operation without added shock, or the tourniquet application can be continued with safety for many hours if necessary. When no operation is anticipated, simple refrigeration is applied without a tourniquet, and though the

chilling is less thorough it can be continued indefinitely. The ease and quickness of these procedures and the freedom to defer finished surgery recommend the method particularly for military emergencies with a sudden rush of battle casualties.

The testimony concerning refrigeration in civil surgery now appears sufficiently strong and unanimous to invalidate all excuses for the failure to provide for it in the Army and Navy. Limb wounds and burns are extremely numerous. Ice is available sometimes on land and generally on ships, or refrigerating apparatus can be had which is less cumbersome than some other equipment which is routinely provided. Both feasibility and benefit have been demonstrated in the few instances where junior medical officers have managed to try the method, and if there are doubts about the use on the fighting fronts, at least the lack of adoption in hospitals to which the wounded are so rapidly transferred is inexcusable.

We need not revert to the lack of anesthetics in winter campaigns in the more primitive countries at the beginning of the war, and the suffering that might have been saved if the development of refrigeration had not been delayed. Right now, the traumatic cases published by McElvenny[21] and by Mock[22, 23] typify a numerous class of wounds which inevitably occur in war and which are fatal without refrigeration. One apparent example of this class has come to public attention because the victim was a newspaper reporter. According to the press accounts published August 22, 1944, the jeep in which Tom Treanor was riding was crushed by a tank; he died the next morning on an operating table in a hospital during amputation of his left leg. The retention of clear consciousness indicated shock. The attempted amputation indicated that his other injuries were not entirely hopeless. This result may be compared with Mock's[22] cases, in which the general injuries were equally or more severe, also necessitating amputation of legs, but by refrigeration the operation was postponed for a week or two and the patients recovered. There is not the slightest valid obstacle to this procedure or the equipping of hospitals for it.

The inaction, however, seems chargeable less to the military services than to the lack of constructive advice from the official Committee on Medical Research. Opinions may differ as to whether this Committee and its subcommittees duplicated the scandal of the dollar-a-year experts of the former war by monopolizing millions of dollars of governmental research grants among themselves and a small institutional circle, or whether the authority and funds for the shock and refrigeration problems were best divided between heirs of the former Shock Committee who might suffer from brusque exposure of its errors, and academic representatives without records of previous experience or accomplishment in this field. I confess personal disappointment with, first, the hardships and delays of the unaided research on both saline therapy and refrigeration, then the years of refusal of a trial in civil practice, and now the years of refusal of a trial in military surgery, and being excluded from every form of participation in the war effort. The one important inquiry is whether or why the huge expenditures have purchased only a negative or minus contribution to this war problem. Against a few technical additions to work already inaugurated and mapped out by others may be balanced the Committee's failure to produce a single new idea in refrigeration or any other line of shock therapy, and its blocking of progress by not attempting to remove or actually encouraging prejudices, fears and blun-

ders regarding the new methods. There has been neither planning nor sanction of conclusive tests to confirm or refute the preconceived ideas which thus far have prevented military provisions for the benefits already demonstrated in civil surgery. Also the new reduced temperature treatment for the frostbitten limbs of shipwrecked sailors would have received neither study nor trial up to now, if it had not been demonstrated in Canada and England. Our attempt to develop the burn treatment and other latent possibilities of refrigeration is blocked by denial of financing or coöperation. The usual polite reticence is not proper at a time when thousands in the military services are dying of shock and limb wounds and burns. If there is no evidence that the proposed methods can be helpful or even deserve a trial, I must stand responsible for exaggerated and offensive claims. But if it is finally proved that the methods are feasible and life-saving and the objections are arbitrary and imaginary, the guilt for suffering and death on such a scale cannot be excused by ignorance. Lacking reform in the policy or personnel of the narrow entrenched authority, the obstruction may be broken only by pressure of professional or public opinion. In that case the prospects are for a trial under the discredited "conservative" auspices, inviting failure. It is a risky and thankless duty to place on record a protest against the maneuvers which have postponed a decision to this late stage of the war.

EMBOLISM

In turning to the subject of embolism, I wish only to present tentatively a few very brief suggestions for discussion and possible trial by surgeons. Diagnosis is not involved. Assuming embolism or any other complete obstruction of a major limb artery, the proposals are as follows.

(1) Whether or not heat has been used in attempting to establish circulation, complete occlusion should call to mind the fact that high temperature accelerates and low temperature retards tissue devitalization and necrosis. Therefore at the earliest possible moment, even before or during transportation to hospital, the limb should be packed in ice or otherwise refrigerated. Pain, shock and spreading thrombosis are also thus reduced. If necessary, a layman can do this under instructions by telephone, to save even a slight delay.

(2) As soon as possible, a physician should apply a tight rubber tourniquet above the point of embolism or occlusion. The purpose is to assure thorough chilling, stop inadequate collateral circulation which carries warmth and blood for clotting into the distal parts, prevent pain, shock and tissue devitalization more completely, arrest thrombosis in distal vessels and the damage to endothelium by adhesion of thrombi, particularly to halt extension of thrombosis at the line of the tourniquet, and to make the patient ready for operation without added shock or anesthesia. This method should greatly extend the time limits for embolectomy and improve the results.

(3) After embolectomy or other repair, cooling of the limb should be continued, in addition to heparin and other aids, in such degree and duration as may suit the individual need. This use of cold is again to inhibit thrombosis and protect tissues whose circulation and vitality may be endangered. The cold penetrates most effectively where the circulation is poorest and the tissue need greatest.

(4) When a case is received too late for embolectomy, the procedure in the City Hospital is to refrigerate the limb radically with bare ice-bags or preferably with apparatus. Crossman[10] has described this method in embolism, and

Mock[23] and Bowers[7] in traumatic thrombosis. The advantages are control of pain and shock and prevention of gangrene and intoxication, affording a respite of days or weeks for building up constitutional strength, with the additional hope that the inevitable amputation may be at a lower level than if it had been performed in the immediate emergency.

(5) It is a challenge to surgeons when damage to a limited area of a main artery thus necessitates sacrifice of the limb. Even more impressive is the fact that at a certain stage of embolism and other accidents the only irreparable damage is in the intima, a restoration of circulation being easily possible except for recurrence of thrombosis due merely to roughening or loss of a small patch of endothelium. I venture to predict that surgeons will soon solve this problem. One of the obvious possibilities, in which our own plans have been blocked for years, has been included in the recent experiments of Blakemore, Lord and Stefko,[6] who, seemingly in ignorance of our published preservations of ligated limbs, have demonstrated the feasibility of amputating a dog's leg, refrigerating it for twenty-four hours, and then restoring it to its original position and function. They anastomosed blood vessels by vein-lined vitallium cannulas left permanently in place. A supply of living refrigerated veins ("vein bank") is seldom available, though the possibility exists that victims of partial or complete traumatic amputation may be transported with their limbs refrigerated long distances by airplane to a surgical center where repairs or restoration can be made one to several days after the accident.

Embolism is a far commoner event, and the problem of repair is simpler. In an exhibit with Dr. Crossman at the recent A.M.A. convention I illustrated a simple proposal for this purpose. It is based on the old-time cannula of Payr or Crile, with which surgeons are familiar, but an innovation consists in a slit permitting removal of the cannula. This

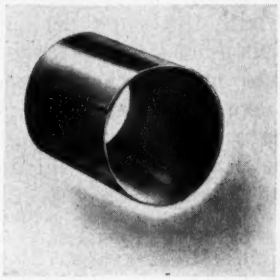

Fig. 1. A piece of tin can or other metal, with edges smoothed, is bent to form a slit cannula.

can be used as a device for easy anastomosis of blood vessels. It can also be a means for lining an artery with a vein.

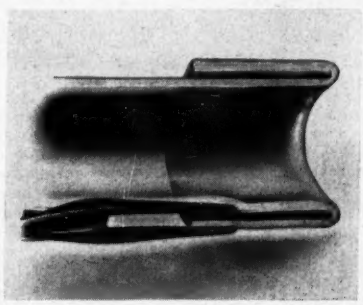

Fig. 2. One end of a severed blood vessel is drawn through the cannula, cuffed back over it and retained by one or two clamps.

The arterial wall furnishes the necessary strength and the vein supplies the endothelium which is lacking. A saphenous vein can be taken from the patient himself, and though it is not as large as the femoral artery it can carry enough arterial blood to prevent necrosis of a leg, especially with the aid of refrigeration. The vein is nourished by the blood flowing through it, and the operator must avoid too much damage to the adventitia of the artery from which its nutrition is derived. Dog experiments carried on

with Doctors Crossman and Armengol for perfecting the technic were interrupted by the usual lack of facilities and financing. The proposal is therefore offered to those who enjoy better opportunities, with the warning that preliminary trials must be made at least on the cadaver to master the technic. Some failures are to be expected, but with proper care no harm will result because the limbs in question would have to be sacrificed anyway.

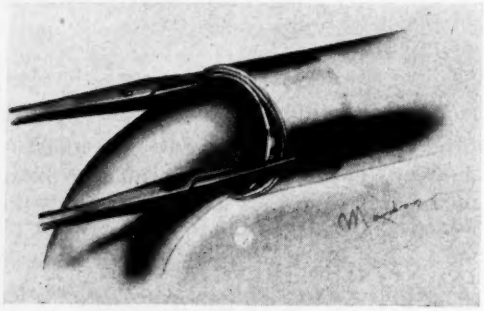

Fig. 3. It is then inserted into the other end of the severed vessel, and retained by one or two clamps. One or two lines of circumferential suture are now placed by plunging in the needle each time until it touches metal, assuring a leak-proof intima-to-intima union. Thereupon the clamps are released, the cannula drawn back from the site of anastomosis, pried open and removed.

This particular method may need to be improved or a better one devised, but the principle appears sound and useful. It is analogous to a skin graft, the vein segment supplying endothelium for the artery just as a full thickness skin graft supplies epithelium for a skin defect. If the vein wall stretches and atrophies, the endothelium can still persist and proliferate indefinitely. It also seems theoretically possible that the slit cannula may sometimes be found convenient for anastomosis of bile ducts, ureters or other passages.

SUMMARY

Primary shock is nervous, arteriolar, vasodilator. Secondary shock is metabolic, capillary, vasoconstrictor. Recent investigations of secondary shock have discredited the potassium intoxication theory and the adrenal cortical therapy. Although experiments in proof of the toxic theory were wrongly performed, the opposite extreme of the physical theory is equally erroneous. The best present evidence supports two coexisting factors: the physical factor of fluid migration and the chemical factor of toxins from injured tissues.

The combating of the physical factor, by conservation of blood volume, is accomplished by:

(a) Preventing escape of fluid, as by tannic acid and other impermeable coverings of burns, and pressure dressings or casts for wounded limbs. Such measures are definitely life-saving in some cases. But as tannic acid has been discarded

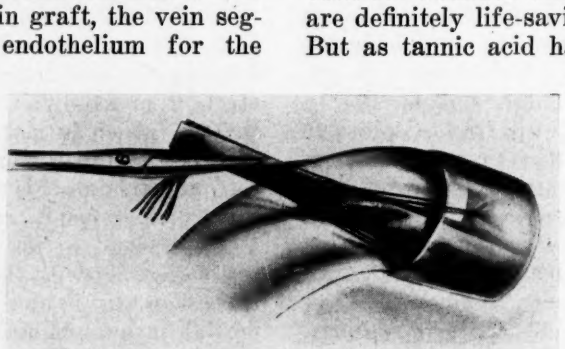

Fig. 4. The same principle is illustrated with a cannula provided with a handle, the cuffed-back vessel-end being secured by three untied retaining sutures, which are clamped to the end of the handle by a single hemostat.

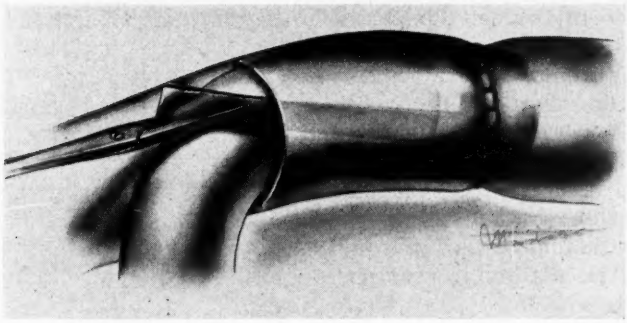

Fig. 5. A vein thus prepared can be inserted into an incision in an artery for any distance, according to the length of the handle. A circumferential suture line then establishes intima-to-intima union, after which the retaining sutures are pulled out, the cannula drawn back, pried open and removed. By repeating this process with the other end of the vein segment in an opposite direction, this portion of artery is lined with vein. The incision in the artery is preferably transverse, in order that the final closure may not narrow the lumen.

because of injurious local effects, warning is necessary against the harmfulness of pressure, particularly on damaged tissues. Refrigeration may be a substitute for pressure or may reduce the injury of pressure.

(b) Replacing lost fluid. The specific need of the shocked organism is not for plasma proteins or any other colloids but for water and sodium salts (Allen[1]; Katz, Friedberg and Asher[15]; Mylon, Winternitz and de Sütö-Nagy[24]; Parkins et al[26]; Scott, Worth and Robbins[30]; Rosenthal[29]). Rosenthal[29] discovered the advantages of oral administration, especially of sodium lactate solutions. The large volumes often needed (too large to be supplied by plasma) are illustrated by Fox's[14] administration of 7 to 10 liters (10 to 15 per cent of the body weight) during the first twenty-four hours of treatment of severe burns. Plasma is only superior to saline for hemorrhage, and even here a saline suspension of red cells is superior to plasma (McKee and co-workers[20]). The archaic treatment of shock by the military services wastes enormous quantities of plasma and an unknown number of lives.

For combating intoxication, no drugs or other specifics are known, and only temperature is efficacious. A cool environment and slightly reduced rectal temperature (perhaps 96 to 94°F.) ap-

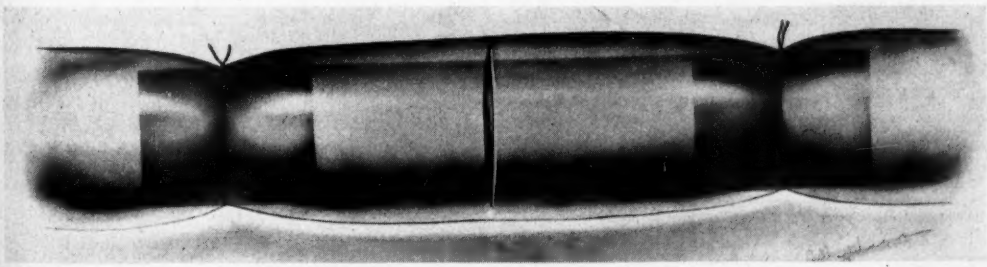

Fig. 6. Diagram of artery lined with vein, ready for suture of the transverse incision. Here it is assumed that two permanent cannulas are used instead of the removable slit cannula. Such cannulas can be retained by simple ligation, which is easier and quicker than suturing. Non-absorbable cannulas of silver or vitallium may presumably serve this purpose, but experiments have been undertaken with absorbable materials, such as magnesium or decalcified bone, the final elimination of the cannula being theoretically an advantage.

pear to be most favorable. Local refrigeration of the injured part is only feasible for limb wounds and superficial injuries (burns, frost-bite) of the trunk, but the radically lower temperature is most effective. The simultaneous control of pain, shock, edema, infection and tissue devitalization gives unique benefits, including avoidance of harmful opiates and reduced need for skin grafting. The published cases of McElvenny, Mock and others also illustrate the life-saving advantages of being able to defer limb surgery for days or weeks until other injuries have been treated and general strength built up.

In complete embolism or thrombosis of a limb, prompt refrigeration without or with a tourniquet checks pain, shock, tissue devitalization and spreading thrombosis and promises to extend the time and improve the results of embolectomy. An experimental proposal is made for lining a damaged artery with a segment of vein, to supply endothelium in a manner comparable to the supplying of epithelium by a skin graft.

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SUMARIO

El choque primario es nervioso, arterial, vasodilatador. El choque secundario es metabólico, cápilar, vasoconstrictor. Investigaciones recientes del choque secundario, descreditan la teoria de in-

toxicación de potasium y de la terapéutica adreno cortical. Aún cuando los experimentos en prueba de la teoria tóxica, fuéron erroneos en su ejecución, el extremo opuesto de la teoria física es igualmente erroneo.

La mejor prueba actual sostiene dos factores coexistentes: el factor físico de la migración de líquidos, y el factor químico de productos tóxicos de los tejidos dañados.

Combatiendo el factor físico por la conservación del volumen de sangre se efectua así: (a) evitando el escape de líquidos con vendaje de presión, estuco o refrigeración de extremidades dañadas; (b) reemplazando los líquidos perdidos, preferablemente por solución salina o de lactato de soda. Baja temperatura o refrigeración se recomienda para combatir intoxicación. En embolismo completo, la refrigeración debiera emplearse immediatamente. Se propone, en lo experimental, forrar una arteria dañada con un segmento de vena.

RÉSUMÉ

Le choc primaire est nerveux, artériolaire et vasodilateur. Le choc secondaire est métabolique, capillaire, vasoconstricteur. Les recherches récentes ont invalidé la théorie d'intoxication potassique et de thérapie cortico-adrénale. La théorie toxique et la théorie physique sont également erronées. Les meilleures données que nous possédons actuellement supportent deux facteurs coexistants: le facteur physique de migration de fluides et le facteur chimique de toxines provenant des tissus lésés. Pour combattre le facteur physique on essayera de conserver le volume sanguin en empêchant: (a) l'echappement des fluides, et en ayant recours à des pansements compressifs, bandages, attelles plâtrées, lotions réfrigérantes; (b) remplacement des fluides perdus préférablement par des solutions salines ou de lactate de sodium.

L'auteur recommande les températures basses et la refrigération pour combattre l'intoxication. Dans l'embolisme complet, la réfrigeration précoce doit être employée. L'auteur propose la doublure d'une artère lésée par un segment de veine.

Выводы

Первичный шок это шок нервный, артериоларный и сосудорасширительный. Вторичный шок это так метаболический, капилларный и сосудосократительный. Последния исследования вторичнаго шока опровергают теорию интоксикации калием а также и терапию адреналной корой. Хотя опыты направленые к доказательству этой химической теории были произведены неправильно, все же крайне противоположная, чисто физическая, теориа также ошибочна. Лучшия современныя показания поддерживают существование двух одновременных факторов: физический фактор, состоящий из перемещения жидкости, и химический фактор, произведенный токсинами от поврежденных тканей.

Физический фактор преодолевается сохранением кровеного об'ема пострествоm: (а) предотвращения потери жидкостей, сдавливающими перевязками, гипсом и замораживанием раненных конечностей; (в) возмещения потерянной шидкости, предпочительно, соляным раствором или раствором молочно-кисларо натра.

Для предохранения интоксикации рекомендуется понижение температуры или замораживание. В случае полнаго эмболизма замораживание должно быть произведено немедленно. Как опыт, предлагается выстилка раненной артерии венозным сегментом.

Ulcerative Leiomyoma of the Stomach*

MOSES BEHREND, M.D., F.A.C.S., F.I.C.S.**
PHILADELPHIA, PENNSYLVANIA

ACCORDING to a review of the literature, leiomyoma is a universal disease in that it affects any organ and any part of the body. Leiomyoma of the eyes, ears, skin, lungs, heart, liver, stomach and intestinal tract has been reported. Leiomyoma of the gastro-intestinal tract is generally considered, however, by most surgeons, as a not so frequent affection.

Depending on the location of this disease, the symptoms and manifestations are somewhat different. Certain clinics have reported several cases over a period of years, while in others the disease has been rather sparse; but the accumulated evidence of all the cases recorded, affecting all parts of the body, comprises a sizeable group. In the past seventy-nine years, in the Jewish Hospital, for instance, only two cases of leiomyoma of the stomach have been operated on. In 1929, when the "Diagnostic Standard Nomenclature of Disease" was started, the only cases recorded are those just mentioned above. In the Mt. Sinai Hospital, only one case has been operated on in the past twenty-three years and that affected the jejunum. A careful search of the autopsy records in this hospital, for the past forty-four years, also reveals the fact that leiomyoma of the stomach was never encountered.† (Fig. 1.)

The two cases recorded in the Jewish Hospital were operated on by me.

*Presented at the Ninth National Assembly, United States Chapter of the International College of Surgeons, Philadelphia, Oct., 1944.

**Services of Jewish and Mount Sinai Hospitals.

CASE REPORTS

Case 1. J. F. R., aged 54, admitted to the hospital on 5/14/37. Patient was in good health until two days before admission, when

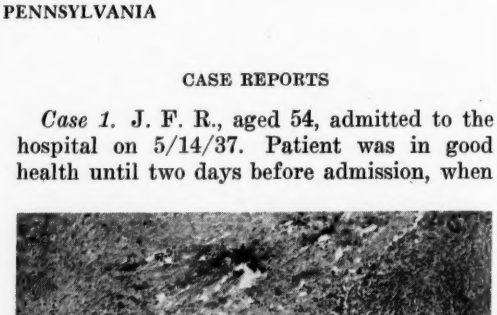

Fig. 1. Leiomyosarcoma of jejunum. Note the invasion of the tumor in the edematous thickened serosa. This represents the only case ever operated on in the Mt. Sinai Hospital (Dr. E. Eliason).

he was seized with moderate mid-abdominal pain, cramplike in nature. The pain seemed to get gradually worse. Enemas were ineffectual. The pain persisted the following day when he vomited a greenish material. He was given a liquid diet following the onset of pain. He took two ounces of castor-oil which gave him bowel movements of "black material." Pain was more constant and severe on day of admission, accompanied by vomiting. Vomitus was blood stained. He had a productive cough. No history of previous gastro-intestinal symptoms. His general health had

†In the past ten years in the Jewish Hospital, out of 110,000 admissions and 3500 post mortems, 2 cases of leiomyosarcoma of the stomach were recorded. In the Mt. Sinai Hospitals there were 84,000 admissions and 1000 post mortems in ten years out of which one case of leiomyosarcoma of the jejunum has been recorded.

been good, but for the past year or so he noticed that he was losing weight. He was subject to frequent colds and sinus trouble. Appetite was good, elimination fair and no urinary symptoms. In 1918 he had a left herniorrhaphy and in 1935 underwent an operation on the right side for hernia.

Blood Pressure, $\frac{140}{90}$. *Urine Examination:* Resection, alkaline; Specific gravity, 1030; Albumen, plus; Sugar, 0; Ac., plus 3; Diac., plus; hyaline casts. W.B.C. and few epithelial cells. Blood Count: Hem., 92; R.B.C., 4.9; W.B.C., 26,000; Neutrophiles, 86; Lymphocytes, 14. *Wassermann,* negative. *Blood Sugar,* 103. *Blood Urea,* 23 mg. Operation was performed on 5/22/37 and the patient was discharged on 6/4/37.

X-ray report: The esophagus is normally patulous to liquids. The stomach is normal in calibre and position. Peristalsis is normal. There is a large filling defect in the antrum pylori which cannot be filled at any time during the study.

Description of operation: Under spinal anesthesia, with the patient in the Trendelenberg position, an upper right rectus incision was made down to the peritoneum, which was opened and the gall bladder found to be normal in size and containing no stones. However, an infiltrating mass was felt, extending a little above and below the pylorus. A Payer clamp was placed on the duodenum and the pylorus was separated. The duodenal stump was inverted with a purse-string suture. Two-thirds of the stomach was removed by means of two Payer clamps and the use of the electric cautery. One-half of the remaining stomach was then closed off with linen thread. The jejunum was brought up and anastomosed to the remaining half of the stomach. There was some slight constriction of the anastomosis when completed, although the opening was quite free and permitted free passage of gas. A jejuno-jejunostomy was considered advisable. The tumor mass was opened and found to contain three ulcers, one of which was gangrenous. The peritoneum was closed with No. 2 chromic catgut, muscle and fascia in layers and the skin with clips and retention sutures. No drainage. *Operation: Hofmeister-Polya operation, jejuno-jejunostomy.*

Pathologic report:

Macroscopic: Specimen consists of portion of stomach measuring 11 by 12½ cm. The antrum pyloris contains a tumor mass which is oval in shape, measuring 5 by 4 cm. The tumor is intramural and it appears to involve the muscularis coat. The submucosa and the mucosa is intact with the exception of three

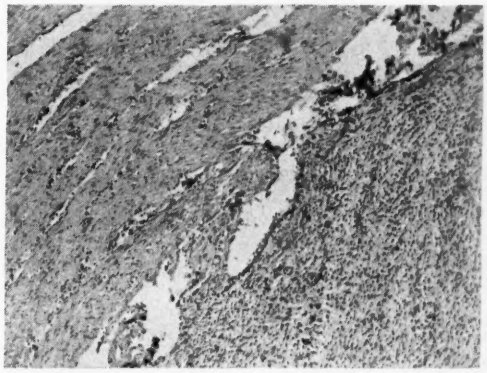

Fig. 2. *(Case 1)* Leiomyosarcoma of stomach. Note the tumor invading the muscle. Operation performed in 1937.

small dimples, which are either beginning ulceration or possible contractures.

Microscopic: Section of stomach shows the mucosa to contain a large number of gastric glands lined by pyramidal shaped cells. There is no loss of polarity. Localized areas of ulceration are observed in the mucosa. A number of lymphocytic cells are seen in the submucosa. The mucosa and antrum pylori show no neoplastic changes. The glandular elements are orderly and open into widely patent ducts. A small number of lymphocytic cells are present in the mucosa. The nuclei lie about the base of the individual cells. The muscularis contains a very large number of abnormal cells. Many of these contain bizarre shaped nuclei. The nuclear chromati are stipled. Some of the cells are multi-nucleated. The tumor shows definite invasive properties. Occasional mitotic figures are seen. There is considerable variation in the size and shape of the nuclei and cells. A number of nucleoli are observed. Some of the tumor cells are large in cluster formation. A number of dilated vascular channels are seen.

Diagnosis: Leiomyosarcoma of antrum pylori (Fig. 2).

Comment: This is the first case I ever operated on for ulcerative leiomyoma of the stomach. Ulcerative leiomyoma of the stomach does not seem to be as common as the simple type of tumor.

A subtotal gastrectomy was performed of the Polya and Hofmeister type. In addition a jejuno-jejunostomy was performed.

Recent history: In April, 1944, the patient was consulted for the purpose of follow-up. He stated that he was never in better health. He had gained twenty pounds in weight and

Fig. 3. *(Case 2)* Note the circumscribed filling defect and its punched-out appearance, typical of the lesion found in the stomach.

had never missed a day since he was able to return to his work.

Case 2. M. E., aged 42. While in the Wills Eye Hospital, being treated for an ulcer of the cornea by Dr. L. Lehrfeld, he was suddenly stricken with a huge hemorrhage about midnight on Jan. 21, 1944. He vomited a large quantity of blood. This was accompanied with pallor, rapid pulse and all signs of a loss of a large volume of blood. Transfusions were necessary. His hemoglobin dropped to 50 and the red blood cells to 2,500,000. On account of the hemorrhage, without any previous gastric symptoms, a snap diagnosis of leiomyoma was made. This was partially confirmed by means of the x-ray. Since that time he had tarry stools every day and anorexia, but no vomiting, indigestion or flatulence. Patient was obese but did not appear acutely ill. Past medical and family history unimportant. Heart and lungs showed no abnormalities. No masses could be felt in a rather flabby abdomen. No pain or tenderness.

Blood Pressure—$\frac{145}{105}$; *Urine:* Reaction, acid; Specific Gravity, 1.020; Albumen, neg.; Ac., neg.; Diac., negative. *Biochemistry:* Sugar, 130 mg.; B.U.N., 16.5 mg. Blood: Hem., 58; R.B.C., 3.1; W.B.C., 87,000; Seg., 79; Ly., 26. *Feces Examination:* Occult Blood, strongly positive. *Wassermann,* negative. The patient was admitted to the Jewish Hospital on 1/17/44 and discharged on 2/6/44.

X-ray report: There is x-ray evidence of an ulcerative polypoid adenocarcinoma of the body of the stomach. (Fig. 3.)

Description of operation: With the patient under continuous spinal anesthesia, in the Trendelenberg position, a right pararectus incision was made. The peritoneum was opened and a tumor the size of a small lemon was palpated in the fundal portion of the stomach. One small nodule was felt in the left lobe of the liver. A Hofmeister-Polya operation was then performed on the stomach. It was necessary to bring the jejunum through the transverse mesocolon for this anastomosis because of the extreme amount of fat in the omentum. A jejuno-jejunostomy was then done. Over each side of the anastomosis a small layer of fat was sutured in place. One rubber tissue drain was placed in the site of the gastric anastomosis and ten grams of sulfanilamide powder were placed in the abdomen. The wound was closed with through and through dermal sutures. The patient received 5 per cent glucose and blood on the table, and in spite of his obesity he withstood the operation very well.

Operation: Resection of stomach, posterior Polya-Hofmeister, *jejuno-jejunostomy.*

Pathologic report:

Macroscopic: Specimen consists of a portion of stomach removed surgically, measuring 12 x 9 cm. in its longest diameter. The serosal

surface is slightly inflamed. The wall measures 5 mm. in thickness. The mucosal rugae are prominent and not inflamed. One portion of the wall is occupied by a spherical nodule, measuring 3½ cm. The mucosa overlying is smooth, slightly inflamed and in one portion there is an ulcer crater 1 cm. across and 1 cm. deep. The nodule does not appear to have perforated through the outer wall of the stomach. The nodule is fairly firm and cuts with slight resistance and appears to be a well encapsulated mass of pale lobulated tissue. (Fig. 4.)

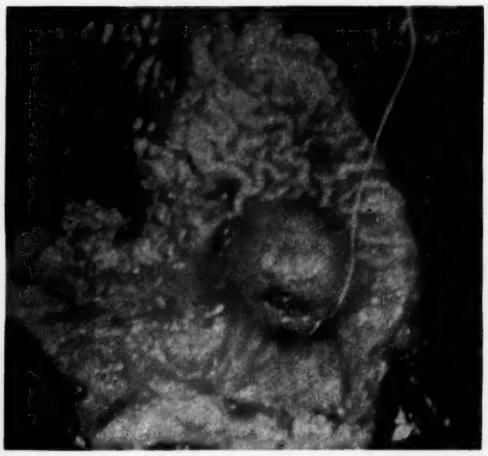

Fig. 4. *(Case 2)* Specimen of stomach with the ulceration shown about the middle of the tumor.

Microscopic: Section of tissue shows a preservation of the gastric mucosa appearing in folds. A number of chief and parietal cells are observed. The muscularis and mucosa are normal. Springing from the muscularis is a neoplasm composed of a large number of bundles of interlacing fibers. The nuclei are vesicular in shape and fairly homogenous. Occasional eosinophiles and mononuclear cells are observed. The nuclear chromatin is stippled. Occasionally a mytotic division is noted. (Fig. 5.)

Diagnosis: Leiomyosarcoma of stomach (low grade malignancy).

Summary: This was a second case in eleven years I operated on for ulcerative leiomyoma of the stomach. The history here again was characteristic—a sudden devastating hemorrhage without any previous history of a gastric disturbance of any kind. The patient was extremely obese, with one of the fattest great omenta ever encountered. It was so fat that it precluded an ante-colic anastomosis. Instead, a posterior Hofmeister-Polya operation was performed. Judging from the microscopic report of this tumor, there is a possibility that the nodule felt in the liver was a metastatic growth.

In a review of the literature, some interesting facts have been revealed. It is generally considered by all surgeons that gastric leiomyoma is a rather rare occurrence. Many years may lapse before a first case is encountered. Bloom and Williams (quoted by Rienets[21]) state that the patient on whom they operated was the first registered in the Medical College of Virginia Hospital in the past fifteen years. Balfour (quoted by Rienets[21]), in a discussion before the staff meeting in the Mayo Clinic, stated that these tumors are not considered common, and that it was surprising to find so many at autopsy. He stated that a patient with repeated attacks of hemorrhage, without other symptoms, should be suspected of harboring a benign tumor. Rienets, J. H.,[21] reported two hun-

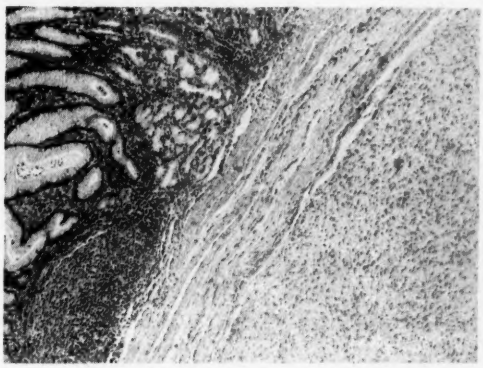

Fig. 5. *(Case 2)* Leiomyosarcoma of the stomach invading the submucosa. A small nodule was found in the liver. Operation in 1944.

TABLE 1

LEIOMYOMA OF STOMACH

Review of Cases Since 1930

NAME OF DOCTOR	AGE OF PATIENT	SYMPTOMS	X-RAY	OPERATION PERFORMED	BENIGN OR MALIGNANT	REMARKS
Down, H. I. (1930)	66	Severe hemorrhage five years before admission to hospital followed by fainting. Dull epigastric distress.	Polyp post. wall.	Excised with the cautery.	Benign	Macroscopic examination revealed no ulceration on the intragastric portion of the tumor.
Willis, R. A. (1930)	76	Pain in lower back. Lump in left upper quadrant. Diarrhea followed by constipation.		Autopsy.	Benign	Died suddenly with acute dyspnea at age of 81. Tumor of stomach in middle of post. wall attached by pedicle.
Gomez de Rosas, N. (1932)	46	Pain in right flank. Chronic constipation. Swelling of abdomen. Loss of weight.	Intragastric tumor extending from fundus to pylorus.	Partial gastrectomy.	Benign	Tumor size of orange.
Meyer, K. and P. Rosi, (1933)	35	Weakness, vertigo and pallor. No pain. Tarry stools.	Smooth, round filling defect in pars pylorica.	Sleeve resection.	Benign	Ulcer on top of tumor.
Eliason, E. L. (1933)	20	Gastro-intestinal hemorrhage. Pain in lower left quadrant. Tarry stools.	Duodenum large and normal. No evidence of abnormalities in small intestines.	Resection and lateral anastomosis.	Leiomyosarcoma	Only patient with leiomyoma reported in Mt. Sinai Hospital in 44 yrs. Recurrence of tumor two years later. Lesion was situated in the jejunum.
Jones, R. D. (1935)	58	Epigastric pain, nausea, distention, diarrhea and melena.	Filling defect near pylorus.	Tumor excised.	Benign	Tumor size of English walnut. Authors do not consider leiomyoma a rarity.
Denham, J. K. (1936)	55	Severe attack of melena. Indigestion 16 yrs. Hemorrhage.	Large filling defect in pars pylorica.	Sleeve resection.	Benign	Tumor size of orange.
Conway, J. H. (1936) Case #1	41	Gastric pain for nine years. Sudden hematemesis.	Defect lesser curvature thought to be ulcer.	Diamond shaped section of stomach and post. gastroenterostomy.	Benign	Gastric hemorrhage made operation imperative. Patient well 19 months later.
Case #2	44	Anorexia. Lost 28 lbs. Epigastric pain 5 yrs. No melena or hematemesis.	Persistent filling defect of antrum, both curves.	Polya-Mayo resection.	Benign	Tumor the size of a silver dollar was in the prepyloric region. Uneventful recovery.
Lindquist, J. L. and H. E. Mock (1937)	61	Severe attack of nausea, hematemesis and syncope. Indigestion four years.	Filling defect on greater curvature.	Excised by cutting pedicle at site of attachment.	Follow-up period planned in order to discover whether tumor was benign or malignant.	Tumor like a small hard rubber ball with crater-like ulcer on its dome.
Mott, W. W. (1937)	58	5 wks. previously epigastric distress followed by tarry stools.		Base of tumor excised with an ellipse of the posterior wall of stomach.	Benign	Tumor size and shape of bantam egg. Two half-inch slits on surface of tumor.

TABLE 1—*Continued*

LEIOMYOMA OF STOMACH

Review of Cases Since 1930

NAME OF DOCTOR	AGE OF PATIENT	SYMPTOMS	X-RAY	OPERATION PERFORMED	BENIGN OR MALIGNANT	REMARKS
Hartman, H. H. and J. D. Camp (1937)	40	Attacks of indigestion six years prior to admission.	Irregularly rounded filling defect in greater curvature of lower third of stomach.	Partial gastrectomy and posterior Polya type of anastomosis.	Benign	Large, pedunculated mass 11 cm. in diameter. Stomach also contained a polyp which was found to be carcinomatous.
Cabot Case 23361 (1937)	49	For three yrs. burning sensation in lower abdomen, then, tarry stools and loss of consciousness.	Smooth, oval tumor 7x5 cm. ant. wall, 5 cm. beneath the esophageal orifice.	Excision of stomach wall with tumor.	Leiomyosarcoma	1 cm. ulceration slightly above center of tumor.
Behrend, M. (1937)	54	Pain two days prior to admission, loss of weight, vomited greenish material, tarry stools.	Filling defect in pyloric area.	Hofmeister-Polya and jejuno-jejunostomy.	Leiomyosarcoma	Ulcerative type of tumor. Patient has been well and attending to all his duties since operation.
Collins, F. K. and D. C. Collins (1938) Case #1	46	Symptoms of obstruction		Gastroenterostomy, end to side jejuno jejunostomy.	Benign	Only gastric fibromyomata reported in 81,000 admissions to Hollywood hospital. Authors believe leiomyoma is probably the most common of all benign gastric tumors
Case #2	41	No previous gastric symptoms. Melena came on suddenly followed next day by hematemesis.		Local excision of tumor.	Benign	Only gastric leiomyoma recorded in over 33,000 admissions to Santa Monica Hospital.
Sworn, B. R. and T. V. Cooper (1938)	59	Gradual loss of weight, nausea, vomiting, epigastric pain. *No hematemesis or melena.*	Large filling defect lesser curvature.	Tumor and small area of stomach excised with diathermy knife.	Benign	Tumor size of tennis ball.
Toland, G. G. and W. P. Kroger	49	Symptoms favored diagnosis of retroperitoneal tumor.	Suggested a tumor in region of stomach.	Tumor excised from stomach.	Benign	Tumor was disclosed by peritoneoscopy. It weighed 1½ lbs., was situated on the post. wall and was developing extra-gastrically.
Ball, Sir Girling (1939)	65	Severe hematemesis, melena and more serious bleeding causing collapse.	Defect along lesser curvature.	Partial gastrectomy. Modified Polya-Moynihan.	Benign	Regarded first as an early carcinoma but microscopic examination proved it to be benign leiomyoma.
Roof, C. S. (1939)	42	Symptoms resembling peptic ulcer. Pain two hours after meals relieved by vomiting. Tarry stools and extreme weakness.	Greater curvature in pars media displaced anteriorly and to the right by a mass.	Excision with small cuff of stomach wall by means of cautery.	Benign	Tumor the size of a grapefruit lying between stomach, colon, spleen and diaphragm, attached to stomach by small pedicle.
Edwards, H. and E. E. Lewis (1940) Case #1	70	Pain after meals for 18 mos. followed by tarry stools.	Oval rarefaction in upper part of body of stomach.	Sleeve resection.	Benign	Large polypoid mushroom-like mass in the fundus of the stomach, ulcerated on the surface.

TABLE 1—*Continued*

LEIOMYOMA OF STOMACH

Review of Cases Since 1930

NAME OF DOCTOR	AGE OF PATIENT	SYMPTOMS	X-RAY	OPERATION PERFORMED	BENIGN OR MALIGNANT	REMARKS
Case #2	68	Upper abdominal pain and flatulence. Loss of weight.	Large filling defect on greater curvature.	Excision with underlying portion of stomach wall.	Benign	Subserous tumor size of hazel nut.
Case #3	49	Severe indigestion, tarry stools and profound anemia.	Abnormal translucent area in stomach near fundus.	Excision of tumor through mucosa of stomach.	Benign	Tumor of polypoid type 3½" x 2½", growing from posterior wall.
Cabot Case #26292 (1940)	58	Acute epigastric distress for 28 yrs. Vomiting, loss of appetite. Shortly before admission, tarry stools.	Large, oval, smooth mass attached to left curvature by broad base.	Subtotal resection.	Benign	Gastroscopy showed the tumor in the body of the stomach. It was of a non-ulcerating type.
Lahey, F. H. and B. P. Colcock. (1940) Case #1	39	Hemorrhage. Lost 12 lbs.	Egg size ulcerated tumor lower portion of stomach.	Subtotal resection.	Low malignancy.	
Case #2	27	4 yrs. before admission tarry stools.	Intramural filling defects.	Total gastrectomy.	Leiomyosarcoma.	The predominating intragastric types tend to become ulcerated. They possess real dangers of sarcomatous degeneration, usually of a low grade. Authors do not consider these lesions rare.
Case #3	60	Indigestion 15 years. Faintness last 6 years.	Filling defect lesser curvature.	Subtotal gastrectomy.	Benign	
Case #4	51	Dark stools.	Filling defect pyloric region.	Subtotal gastrectomy.	Leiomyosarcoma.	
Case #5	40	Severe hemorrhage 9 mos. before operation. Black stools 1½ yrs. ago.	Filling defect pyloric region.	Subtotal gastrectomy.	Benign.	
Case #6	47	Four weeks before admission hematemesis.	Mass fundus of stomach.	Submucous excision.	Leiomyosarcoma. Low malignancy.	
Case #7	45	Persistent anemia and weakness for 2 years.	Oval pedunculated mass mid-portion of antrum.	Subtotal gastrectomy.	Leiomyosarcoma.	
Whyte, D. (1940) Case #1	53	Indigestion, hematemesis and tarry stools.		Excised with a 2 cm. margin of stomach wall. Stomach repaired.	Benign	Tumor on greater curvature. Author believes leiomyoma to be a rare tumor.
Case #2	51	No indigestion. Nausea, sweats, hematemesis.	Peculiar large round filling defect in upper part of pars media.	Partial gastrectomy with removal of growth.	Benign	Tumor on upper part of pars media.
Christopher, F. et al. (1941)	11	Sudden emesis of brown fluid occurring several times.	Tumor mass encroaching on duodenal bulb, antrum and body of stomach from lesser curvature.	Hofmeister-Polya with anastomosis of jejunum and proximal portion of stomach.	Malignancy suspected.	The diagnosis after the operation was gastric neoplasm of unknown nature. Microscopy proved it to be malignant

TABLE 1—*Continued*

LEIOMYOMA OF STOMACH

Review of Cases Since 1930

NAME OF DOCTOR	AGE OF PATIENT	SYMPTOMS	X-RAY	OPERATION PERFORMED	BENIGN OR MALIGNANT	REMARKS
Halperin, P. H. (1941)	58	Pain, loss of weight, tarry stools and vomiting of coffee-ground material.	Large filling defect, size of small orange, involving pars media on lesser curvature side.	Resection of stomach from above tumor mass to below the pylorus with Payr clamps.	Benign	Wangensteen suction postoperative. Author states that the number of leiomyomas of the stomach, which have been operated on is exceedingly small.
Levi, S. I. and J. S. Horn. (1941)	65	Intermittent indigestion for 15 yrs. No vomiting or loss of weight. Admitted with severe hematemesis. Hgb. 30 per cent.	Large filling defect high up on anterior walls of stomach. Circumscribed and well defined.	Modified Polya operation.	Benign	Patient was admitted for an emergency operation.
Bloom, N. and C. Williams. (1942)	68	Two fainting spells. Tarry stools. Vomited blood.	Filling defect of cardiac portion.	Pedicle clamped. Excision of tumor.	Benign	Only patient with leiomyoma in 15 years in Virginia Hospital.
Martel, G. E. (1944)	42	Secondary anemia and profuse melena.	Filling defect uppermost portion of greater curvature.	Radiotherapy. Total 5000 r.	Benign	Patient improved. Author believes leiomyoma is a relatively rare form of gastric tumor.
Behrend, M. (1944)	42	Hemorrhage, tarry stools and anorexia.	Evidence of an ulcerative polypoid adenocarcinoma of the body of the stomach.	Posterior Polya-Hofmeister. Jejuno-jejunostomy.	Leiomyosarcoma.	Patient is well 10 months after operation.

dred post-mortem examinations of the stomach, in which forty-three leiomyomas were found in thirty-two stomachs. Six of them had undergone carcinomatous changes. In a third group, there were thirty-four leiomyomas in thirty stomachs. In the fourth group of twenty-one leiomyomas, fourteen were removed at operation. All sexes were affected equally, and the average age was 51.4 years. In follow-up records of nineteen patients, there were no recurrences. Davidson, P. B.,[8] reports thirty-one cases collected from Boston hospitals. Twenty of these were autopsy findings. In eleven cases operated on, various diagnoses were made. In order to make a diagnosis, he states, there should be a regular filling defect, with a crater deformity, where ulceration has occurred. The question of malignancy of leiomyoma was considered. Scagliosis, G.,[23] states that in the Mayo Clinic, myoma constituted 0.44 per cent of all gastric tumors from 1907 to 1921. He quotes Eliason and Wright as reporting 325 cases in 1925. They claim that 60 per cent of all simple gastric tumors are leiomyoma. Huhnermann estimates four myomas in every 1125 tumors of the stomach, or 0.35 per cent. Morgagni in 1762 was the first to observe myoma of the stomach. Scagliosis states that, while myomas may affect those of middle age more frequently, a tumor has been reported in a child eight years old and in persons of advanced age. The most common location is the pyloric end of the stomach. According to Karl Brass,[2] from 1923 to 1938 fifteen cases of nonmalignant cases of the tumor of the stomach came to the Frankfurt Pathologic Clinic. Five were

round-celled blastoma and ten were malignant myoma. Three other cases of gastric myoma were reported—two with fatal hemorrhage and one with perforation. Lahey, F. H. and Colcock, B. P.,[16] report seven cases of which five showed sarcomatous degeneration. They conclude that leiomyoma is not rare. Minnes and Geschickter cite 65.3 per cent of simple leiomyoma. The youngest was a child 9 years old and the eldest a man of 78. Petro Leon[17] reports that Nigrosoli, in 1927, collected 211 cases of myomatous tumors of the stomach and of these ninety-nine were myoma. Melnick, in 1932 found 309 cases reported in the literature.

X-ray: Radiologists often are able to make a diagnosis as a result of the symptoms and the reading of the plates. Edwards and Lewis[11] quote Moore as giving some interesting signs in the reading of x-ray plates, namely, (1) a filling defect that is circumscribed and punched out in appearance. (2) The filling defect is usually on the gastric walls, leaving the curvatures regular and pliant. (3) While the rugae are obliterated in the immediate area of the tumor, the rugae surrounding the tumor are normal in arrangement and distribution. (4) Little or no disturbance of peristalsis and retention is uncommon, except when the tumor is near the pylorus. (5) They do not reveal a niche nor is there any evidence of incisura or spasm. Gastroscopy will confirm the diagnosis.

From the above table, it should be noted that all types of gastric operations have been performed for leiomyoma of the stomach. The operations range from the simple removal of a tumor with a long pedicle, an excision of a sessile tumor with a section of the stomach, a simple gastrostomy to a sub-total gastrectomy, followed by the different types of the Polya operation (ante-colic or post-colic), and, finally, a complete gastrectomy is performed, depending on the character and position of the lesion found at the time of operation. Out of thirty-nine cases reported in this table, twenty-eight proved to be benign, ten were malignant and there was uncertainty about one case. Those that are malignant are usually mild in character. The occasional case may be quite malignant with metastasis found at operation or some time after the recovery of the patient. The incidence of recovery following operation is high.

CONCLUSION

1. The youngest patient who had been operated on found in literature was 8 years old, and the eldest was 78.

2. Leiomyoma of the stomach is considered a rare occurrence by many surgeons, although there are differences of opinion upon this subject. In seventy-nine years, since the founding of the Jewish Hospital, there are recorded two cases. In the Mt. Sinai Hospital, founded in 1900, only one case has been reported. The lesion was in the jejunum.

3. It must be reiterated that leiomyoma of the stomach, in the personal experience of any one surgeon is a rare condition.

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SUMARIO

1. El paciente más jóven que fué sometido a la operación, según la literatura, tenía edad de 8 años y el de más edad de 78.

2. Leiomioma del estómago, en el concepto de muchos cirujanos ocurre rara vez, aún cuando existen diversas opiniones sobre ese punto. En setentainueve años desde la fundación del Hospital Judio de Filadelfia, sólo dos casos son relatados, y en el Hospital Mt. Sinai, fundado en 1900, sólo a un caso se hace referencia y la lesión se desarrolló en el jejuno.

3. Debe reiterarse que leiomioma del estómago, en la experiencia individual de un cirujano, es rara.

RÉSUMÉ

1. Le plus jeune opéré était âgé de 8 ans; le plus âgé avait 78 ans.

2. Les léiomyomes de l'estomac sont rares. Il faut admettre qu'il y a une différence d'opinions sous ce rapport. Dans soixante-dix-neuf années, il n'y eut que deux cas à l'Hôpital Israélite. A l'Hôpital Mt. Sinai fondé en 1900, il n'y a eu jusqu'à présent qu'un cas. La lésion était dans le jejunum.

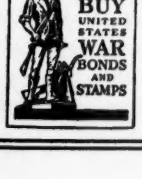
3. Nous répétons que les léiomyomes de l'estomac sont d'une grande rareté. De nombreux chirurgiens n'en ont jamais rencontré.

Выводы

(1) Обзор научной литературы показывает, что самому молодому оперированному пациенту было восемь лет, а самому старому семьдесят восемь.

2) Леиомиома желудка считается многими хирургами очен редкой болезнью, хотя существуют по этому вопросу разныя мнения. За семьдесят девять лет с основания Еврейскаго Госпиталя (Mt. Sinai Hospital) основанном в 1900 году был доложен только один случай, в котором было поражение jejunum.

(3) Тем не менее в личном опыте всякаго хирурга леиомиома является большой редкостью.



THIS IS YOUR COUNTRY TO HAVE AND TO HOLD
KEEP HER FOREVER SAFE AND STRONG
BUY MORE AND MORE WAR BONDS AND STAMPS

Surgeons and Events

by

DR. MAX THOREK

SERGEI S. YUDIN*

Sergei S. Yudin, prominent surgeon of the Soviet Union, was born in 1892.

At the age of twenty-two he was graduated from the Medical School of Moscow University. He served at the front during the First World War. Following the War he became a Zemstvo physician and was assigned to Zakharino sanatorium near Moscow. It was here that he initiated his surgical career with his first gastric resections and thoracoplasties.

In 1922 Yudin was transferred to a small hospital in Serpukhovski, which attracted many visiting surgeons because of the brilliancy with which he presented his cases before the Moscow Surgical Society. By 1938 his technic of radical resection of perforated and gastric ulcers was widely discussed throughout the Soviet Union.

In 1926 he was sent to the United States by the Soviet Government for a period of six months' study. At this time Yudin visited the Mayo Clinic and those of Drs. Kelly, Babcock, Crile and Cushing.

Upon his return to Russia he became Director of Surgery of the Sklifasovski Institute for Traumatic Diseases, which receives all emergency cases of Moscow, totaling 60,000 per year.

At Yudin's initiative, extensive studies were made of the biochemical properties

Sergei Yudin, F.I.C.S. (Hon.)

of blood, and it was his pioneer work in the use of cadaver blood in transfusions that led to the use of blood banks. In the Sklifasovski Institute 5000 transfusions of cadaver blood were made within a period of twelve years, and Yudin's method was widely adopted.

According to the figures published by

(Continued on page 451)

*From an article by Dorothy Halpern in "The American Review of Soviet Medicine," February, 1944.

Ulcus Callosum Recti (Hochenegg)

FELIX MANDL, M.D., F.I.C.S.*

JERUSALEM, PALESTINE

WHEN Hochenegg,[1] in a publication which appeared in 1926, described a case of nonspecific rectal ulcer, he emphasized the difficulty of its clinical distinction from carcinoma. In 1897 the patient, aged 58, had undergone a colostomy for a high, firm rectal tumor, then diagnosed as carcinoma. When the patient presented himself thirteen years later, the tumor had disappeared. In 1918 the colostomy was closed and even in 1922 a follow-up examination revealed that the patient, then 83, enjoyed excellent health.

Four cases of a similar nature were described by me in 1922.[2] In the absence of any specific disease (syphilis, gonorrhea, tuberculosis, lymphogranuloma inguinale) and by analogy with the terminology employed in gastric surgery, Hochenegg thought it justified to give them the name *"ulcera callosa recti."*

In the course of time similar cases were reported, although the explanation and interpretation they were given obviously deviated from those of the original observer. Thus Hermann Strauss,[3] when discussing the etiology of rectal stricture of a venereal origin, also mentions "ulcus callosum stenosans recti." He points out that in the vast majority of cases the condition is in some way connected with lymphogranuloma inguinale and that among 72[1] patients, 69 had a positive Frei test. No doubt the patients he is referring to in his article present the ulcerative type of lymphogranuloma inguinale, so that a differential-diagnostic distinction from carcinoma need not be taken into account. They are, therefore, something quite different from the cases reported by Hochenegg.

Another affection of a similar nature was referred to by Todd[4] in his Hunterian Lecture, "Rectal Ulceration after Irradiation of Carcinoma of the Cervix Uteri, *i.e.*, Pseudocarcinoma Recti." Here the author describes ulceration of the rectum following irradiation treatment of uterine cancer and, on digital examination, the lesion appears so similar to carcinoma that it has been called "pseudocarcinoma of the rectum." There are two distinct types, the one restricted to the rectal wall while the other appears mainly to involve the perirectal tissue with secondary involvement of the rectum. Diagnosis is governed by clinical features and the history of previous irradiation of the vagina. Obviously, however, this lesion has nothing in common with the type of *ulcus callosum recti* referred to by Hochenegg, particularly as there exists no doubt as to its etiology.

Louis Buie[10] described a lesion which he called "factitial proctitis" or "factitial ulcer," usually arising on the anterior rectal wall and allegedly occurring in 3 per cent of all patients who have received x-ray therapy on account of extra-rectal conditions (carcinoma of the uterine cervix, carcinoma of the ovary, epithelioma of the bladder, etc.). According to that author, the lesion may be mistaken for rectal carcinoma although the characteristic proctoscopic picture of inflammation and telangiectasis—apart from x-ray therapy reported in the history—should help to avoid these mistakes.

These ulcers, provided that the under-

*Hadassah University Hospital, Surgical Department D, Jerusalem, Palestine.

lying disease on account of which x-ray therapy has been instituted is successfully influenced, as a rule heal spontaneously.

In this connection, mention should be made of the so-called "simple" ulcers of the colon and rectum which were described by Cruveilhier[5] as early as 1830. Quenu and Duval,[6] Barron,[7] Wire,[8] Barlow *et al*[9] also described them. The most prominent feature of this lesion is perforation, and in no case was it possible to establish the diagnosis prior to operation. There is, according to the literature, no question that the lesion might possibly be mistaken for carcinoma.

Only amebic dysentery may occasionally be accompanied by ulcers which may be confused with cancer and should, therefore, be included in the present consideration.[10]

After Hochenegg's publication in 1928, reference to cases of definite *ulcus callosum recti* is to be found in the literature only twice. Kreuter[11] operated on a patient, aged 59, for an indurated ulcer of the rectum which he suspected to be a carcinomatous growth and which was located 4 cm. above the anus. Microscopic examination of biopsy specimens taken by rectoscopy was repeatedly negative. Kreuter resected the ulcer, sparing the sphincter ani, according to the method devised by Hochenegg, and the patient recovered. The pathologic specimen presented no evidence of malignancy. There was nothing but unspecific granulation tissue and ulceration without atypical epithelial proliferation. The lymph nodes showed chronic, inflammatory infiltration.

Henrich,[12] under the heading "A Contribution to Ulcus Callosum Recti," describes the case of a woman of 69 who presented a large, firm, rugged tumor of the rectum, 6 cm. above the ampulla, which was only slightly movable. When the abdominal cavity was opened the pelvis appeared already plastered with tumor masses. Colostomy was done and the patient made a surprisingly speedy recovery. Ten weeks later follow-up examination, rectally as well as proctoscopically, revealed that the tumor had completely disappeared. Microscopic examination of biopsy specimens was not made.

Apart from the experience I gathered at my former place of activity (to which I will refer later) I saw during the last four years two cases which are to be included in this group and which are presented herein.

CASE REPORTS

Case 1. Mrs. R. W., aged 23; admitted to the hospital on June 26, 1940. For several weeks she had been complaining of severe anal pain occurring in paroxysms. Bowel movement normal; no hemorrhage. She was in a fair general condition. Urine, feces, blood: normal.

Rectal examination: At a height of about 7 cm. above the anus a circular, firm tumor with raised edges was felt, stenosing the rectal lumen so that the tip of a finger could barely be introduced. The upper border of the tumor could not be reached, but the tumor could not be moved mechanically.

Rectoscopy: With the rectoscope it was possible to touch the lower extremity of the tumor, and here a specimen for biopsy was taken. Microscopically, there was chronic inflammation, and in some of the glandular tuvules epithelial hyperplasia. The question as to whether or not we were dealing with a neoplasm could not be decided.

Colostomy, July 1, 1940: During the operation we found a very firm intestinal tumor in the cul-de-sac of Douglas almost entirely blocking the rectal lumen. No lymph nodes. Liver normal. Under the assumption that the tumor was a carcinoma recti, colostomy (transverse colon) was performed.

Rectoscopy, July 14 and 21: No change.

Biopsy, July 21, showed chronic inflammation with necrosis of the mucous membrane and absence of epithelium. No evidence of malignancy.

Rectal examination, August 14: Tumor considerably reduced in size. Radial operation which had been decided upon was, therefore, postponed.

Irrigoscopy, Aug. 14, from the lower arm of the colostomy showed no narrowing of the intestinal lumen.

Patient discharged, August 27. When we saw her again in September the tumor had entirely disappeared and no trace of it could be detected either on digital examination or rectoscopically.

October 14, 1940: Colostomy closed.

In 1942 the patient was found to be perfectly well, rectal finding negative.

Case 2. Z. K., aged 29; admitted to the hospital for the first time on May 11, 1942. She reported several cases of tuberculosis in her family. She herself complained of pain in the lower left abdomen. After bowel movements the pain used to subside. Temperature up to 38.5°.

Blood cell count, urine, EKG, Widal, Weil-Felix, paratyphoid, Bang cutaneous test, x-rays of the lungs, gynecological examination, feces were all normal.

She was discharged on May 20, without diagnosis. She then began to run a subfebrile temperature; some months later diarrhoea set in, occasionally occurring five or six times a day with admixture of blood and mucus.

Second admission September 18, 1942. Blood cell count normal; urine normal; feces, free and *entameba hystolytica* positive; Mantoux 1:500,000++; Widal negative; Bang cutaneous test negative; rectoscopy (up to 25 cm.) normal; irrigoscopy normal; formol test negative; puncture of the spleen negative; lungs normal; EKG normal; blood, cerebrospinal fluid normal; Wassermann negative.

On account of the amebiasis which had been discovered the patient was given emetin-yatren and dismissed in an improved condition.

Third admission on December 20, 1942. For a few weeks the patient had done well, then diarrhoea set in again, this time accompanied by marked bleeding. She had lost considerable weight. Blood cell count: anemia of 2,800,000 red blood corpuscles; hemoglobin, 70 per cent; white cell count normal. The blood was improved by three blood transfusions. Between December and February various examinations and tests were made: Mantoux, Dec. 24, 1:500,000+++; January 7, 1:100,000++; January 27, 1:100,000+; February 9, 1:100,000+.

Blood sedimentation rate: December 21, 1 hr., 47 min.; January 3, 4 hr. 10 min.; January 17, 7 hr.; February 2, 5 hr. 20 min.; February 23, 2 hr. 14 min.

Urea, glucose, total protein, bilirubin, diastase, Takata-Ara, cephaline tests all normal. Weltmann VI. Sputum: tubercle bacilli (antiformin) negative; feces: tubercle bacilli negative; *entameba histolytica* positive. X-ray of the lungs normal; irrigoscopy negative.

From January 6 to 17 the patient was given a course of emetin and sulfaguanidine therapy, but with no effect on temperature, pain and diarrhea. She continued to lose weight. On February 11, 1943, the patient was transferred to the surgical department.

Digital examination revealed at a height of 5 cm. above the anus several firm, polypous nodules, protruding into the intestinal lumen and giving the impression of a movable circular, nodular malignant tumor.

Rectoscopy: The rectoscope could be passed, but revealed no changes either above or below.

Biopsy (February 11): Some patches of necrosis of the mucous membrane and submucous tissue. Many leukocytes. Diagnosis: inflammation, no evidence of tumor.

On February 21, microscopic examination of another biopsy specimen revealed the same findings as on February 11. *No amebiasis (Prof. Adler) even on repeated examination.*

Rectoscopy, March 4, showed the tumor somewhat reduced in size and in its center evidence of softening and suppuration.

Therapy (March 9 to 23): Yatren-rivanol irrigation, following which (March 19) the tumor appeared to have grown again, was more indurated and occupied a larger area than before (about 5 cm. in length). It was movable and the finger could easily be introduced into the lumen. The upper and lower edges were indurated.

Biopsy, March 19, was taken under direction of the eye in anesthesia and with widening of the sphincter. The tumor had a polypous appearance. It was circular, hard, movable, mechanically as well as on pressing,

and the finger could be introduced into the lumen.

Microscopically, the surface of the specimen was found to be covered by mucous membrane with partly fibrous muscular tissue in the center. Beneath the epithelium the vessels were replete and there were some hemorrhages. No evidence of malignancy.*

March 24: Colostomy in the sigma.

April 11: Tumor unchanged.

April 25: The edges of the tumor were softer, the tumor reduced in size, with a slight depression in the center of the portion adjoining the vaginal wall. In general, one got the impression of retrograde development.

April 28: The patient was discharged.

May 15: The tumor had entirely disappeared. Rectoscopy: normal findings. She had gained 8 kg.

July, 1943: The colostomy had been closed and the patient felt well.

The practical significance of the findings given in the foregoing is obvious. The problem is, however, how to establish the diagnosis. The age of the patient (ours were comparatively young) will be of no great help in view of the frequent incidence of carcinoma, especially of the rectum, in juvenile persons.[13]

Digital findings differ in no way from those obtained in carcinoma and the same holds true for rectoscopic examination. The only means of distinction from carcinoma as well as from other noncarcinomatous lesions of the rectum referred to above are the microscopic findings in the biopsy specimen. However, even here mistakes are possible, as is shown by an abstract of my publication dealing with *1000* sacral operations of rectal carcinoma which is given below:[14]

1. In five cases, radical operation for rectal carcinoma was performed, although microscopically the lesion was definitely benign.

2. Four patients presenting tumors which were considered carcinomas were given colostomy, the tumors disappeared and the patients remained healthy (*cf.* above).

3. In two cases, although biopsy findings were negative, radical operation was decided upon and microscopic examination of the operative specimen revealed carcinoma.

4. Although on biopsy histologic findings were positive, two patients refused to give their consent to operation and remained healthy.

From the above, the following conclusions may be drawn: Where the evidence is doubtful, biopsy should be resorted to more frequently. It should be performed under adequate anesthesia and in full realization of the importance of this procedure as a major surgical manipulation. That on positive microscopic findings, radical operation should follow immediately is rather obvious. The decision will be made more difficult by positive findings on digital examination, while microscopic inspection fails to reveal any evidence of malignancy. Everything depends here on the authority of the histologic examiner and the technical adequacy of biopsy.

The etiology of the lesions referred to in the foregoing is as yet imperfectly understood. In this country, a possible connection with amebiasis, in spite of negative bacterial findings, should be taken into consideration.

Therapy: As it is now generally accepted that *ulcus callosum recti* is *not* to be considered a pre-carcinomatous formation, radical operation is unnecessary. According to our experience, colostomy should suffice to allow healing of the ulcer, which may, however, take several months. Colostomy should be chosen so as to facilitate later closure.

SUMMARY

Account is given of two recently treated cases of *ulcus callosum recti* and

*I am indebted to Prof. Franco and Dr. Unger for the numerous microscopic examinations.

differential diagnostic distinction from other lesions is discussed. In both cases colostomy sufficed to effect cure and after a few months the colostomy could be closed The importance of this lesion and its distinction from carcinoma are pointed out.

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SUMARIO

Se da cuenta de y se discuten dos casos recientemente tratados de ulcus-calosos-recti y el diagnóstico diferencial distinguiendo otras lesiones.

En ambos casos la colostomía fué suficiente para efectuar la cura y después de unos pocos meses la colostomía puede ser cerrada.

La importancia de esta lesión y su distinción del cancer, es indicada.

RÉSUMÉ

L'auteur rapporte deux cas de ulcus callosum recti récemment soignés. Il discute le diagnostic différentiel de cette lésión. Dans les deux cas la colostomie effectua une guérison. Après plusieurs mois, la colostomie fut fermée. L'importance de cette lesión et sa différentiation du carcinome sont discutées.

Выводы

Дан отчет двух недавных случаев твердой язвы прямой кишки (ulcus collosum recti) и отличие этой язвы от других поражений. В обоих случаях колостомия произвела полное выздоровление, и через несколько месяцев колостомию можно было закрыть. Статья подчеркивает важность этого поражения и его отличие от рака.

SERGEI YUDIN

(Continued from page 446)

Dr. Gordon Gordon-Taylor in the *British Medical Journal* for November, 1943, Dr. Yudin's surgical activities embraced many fields. Since he has been head of the Surgical Service of Sklifasovski Hospital, 5500 foreign bodies have been removed from the esophagi and bronchi, with a mortality of slightly more than 1 per cent; Dr. Yudin has performed 89 esophagoplasties for stricture of the gullet; he and his assistants have performed 5500 operations on the stomach and 100 total gastrectomies for cancer, with a mortality of only 30 per cent; he has performed 3 amputations of the hind quarters for sarcoma of the hip or femur, and a number of plastic operations for congenital absence or atresia of vagina.

Yudin has written a number of surgical works, among them "A Guest of American Surgeons," a sequence of his visit to the United States in 1926, "Transfusion of Cadaver Blood to Man," "Military Field Surgery," "Treatment of War Wounds with Sulfonamides," and "Treatment of Complex Fractures of the Extremities."

His activities were restricted by illness in 1942, but he returned to active duty during the bombardment of Moscow as a lieutenant colonel in the medical corps.

Dr. Yudin holds the Order of the Red Star and the Order of Stalin. In 1943 honorary fellowships were conferred on Dr. Yudin by the Royal College of Surgeons of England and the American College of Surgeons. This distinguished Russian colleague is an Honorary Fellow of the International College of Surgeons.

Intra-Abdominal Calcareous Tumors

ENRIQUE ST. LOUP B., M.D., F.A.C.S., F.I.C.S.
LA PAZ, BOLIVIA

FINDING of calcareous tumors within the abdominal cavity no doubt is a rare occurrence. The lack of bibliographic data itself is a proof. Except for the lymphatic gland calcifications, those occurring within the fibromyoma and cases of lithopedion, there are no others mentioned; even when dealing with calcified glands, which are not so very rare. We often find them at an autopsy rather than by clinical diagnosis. These circumstances have induced me to prepare this paper.

CASE REPORTS

Case 1. On the tenth of June, 1942, I admitted to my ward in the General Hospital a female patient, 39 years of age, complaining of amenorrhea, digestive disturbances and constipation. Menstruation had started at 18 and continued with periods of amenorrhea, sometimes as long as thirteen months. She had one labor, six years after marriage. The present amenorrhea started three years ago.

Examination shows a pale and emaciated patient. By manual examination it was shown that there was a hard tumor, of stony consistency, smooth surface, round in shape, corresponding to the uterus. Palpation was painless and the mass in question was movable. Both cul-de-sacs showed nothing of importance. The routine examinations of urine, blood, etc., showed nothing worth mentioning. On the other hand, the roentgenographic picture was very interesting, as can be seen in Fig. 1, which shows a rounded central mass, of an opacity comparable to that of the bones, studded with small papillary eminences, which occupied the center of the pelvis minor and did not seem to reach the floor of the pelvis, having instead a convex, clean-cut border below.

What could it be? Undoubtedly we had here a tumor of stony consistency, the opacity of which showed its calcareous nature. Palpation allowed us to locate this tumor in the uterus in spite of the fact that the roentgenographic picture showed a lower terminal border, and it looked more as if there were a pedicle above, uniting it to the sacrum. But it was only in appearance. Now then, a uterine calcareous mass could not be anything but a calcified fibroma or a lithopedion adherent to the uterus; however, comparing the findings with the patient's complaint, there was no logical explanation. Two facts dominated the clinical history: the digestive disturbance and the amenorrhea. The first might perhaps be related to the presence of the tumorlike mass adherent to the epiploon (greater omentum), but the amenorrhea tallied less properly with the hypothesis of a uterine fibroma. Supposing the latter to be a subserous growth, the absence of a menorrhagia might be explained, but why amenorrhea? Regarding the other, the lithopedion, I must confess that upon trying to discuss its possibility, a picture came to my mind that I had seen in an illustrated roentgenography, in a paper by Emmert,[3] entitled "The Life History of a Lithopedion." As can be seen, the likeness of that picture of a case of lithopedion to that of Fig. 1 is so remarkable that if it were not for the presence of a shadow of a long bone in Emmert's picture, it could be said they were the same. But, except for this, the subjective signs did not correspond. The patient suffered from several periods of amenorrhea, the last of which could be traced back three years, and never complained of any symptom that might lead to the suspicion of pregnancy of that stage corresponding to the size of a tumor as large as a fist which we found. The adynamia and emaciation added to the digestive disturbances gave an inkling of its true nature, but nothing more.

On June 24, we proceeded to operate. After opening the peritoneal cavity, we found the epiploon adherent to the tumor and the bladder; when these adhesions were broken up,

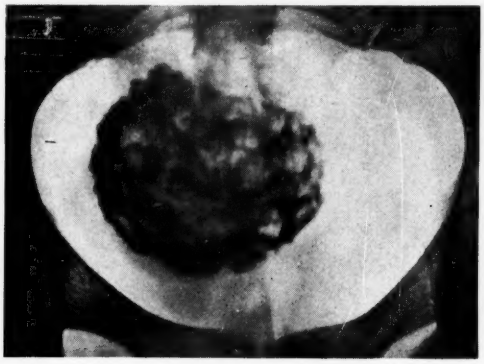

Fig. 1. Intra-abdominal calcareous tumor, made up of calcified helmet of omentum wrapping uterus.

we found a solid mass wrapped up in a true capsule that also enclosed the uterus. By dissection we isolated the tumor mass which had the stony consistency of its calcareous nature. It was a thick shell covering the uterus like a helmet. The underlying organ appeared small and elongated, the ovaries looked like matted or rolled up cord, of a grayish color.

The histo-pathologic report read "calcareous deposit which when dissolved leaves fibres of connective tissue pressed tightly together." The patient was discharged on the 31st of July, free from digestive disturbances and able to eat food normally.

What was the exact diagnosis? The question propounded at the beginning remained without a satisfactory answer. It was not a calcified fibroma; it was not a lithopedion. A suspicion that we were dealing with a tubercular process had already come to our minds. There was nothing to corroborate it. It was the finding in another case, a peri-uterine tumor, in a less advanced stage, which led us to suspect its genesis.

Case 2. A female, aged 20, was admitted to the General Hospital for an intestinal disturbance which almost led to an emergency operation. She was a native who had never been pregnant but who at the time believed herself pregnant because she had not menstruated for more than two months. Examination showed a tumor clearly in the uterus which reached up to two fingers breadth from the umbilicus. Its median location, ovoid shape, absence of tenderness, seemed certainly to indicate pregnancy, but the size did not correspond to the indicated stage (two and a half months of amenorrhea).

There was no softening of the cervix, no pigmentation or other signs of pregnancy. Could it be a subserous myoma? We resorted to the hysterosalpingography shown in Fig. 2. The shadow of the uterine cavity appeared normally triangular and the Fallopian tubes were patent, therefore the tumor must be parietal.

At the operating table, we found the peritoneum thickened and adherent. The uterine tumor was made up of thick layers of epiploon covering the uterus. The other organs of the

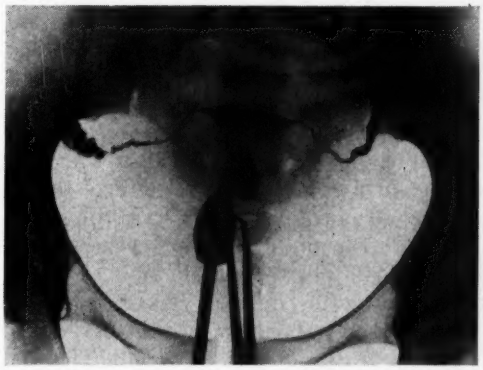

Fig. 2. Uterine tumor in a patient suffering from amenorrhea, reaching up to the umbilical line and showing on x-ray study a normal triangular uterine cavity and patency of the Fallopian tubes. The operation established the presence of a tumor made up of thickened epiploon layers wrapping the uterus and the presence of tuberculous peritonitis.

pelvis minor were also covered, though not so thickly. A seropurulent collection escaped from some corner. The peri-uterine tumor proved definitely that what we had there was a tubercular peritonitis. Three months later the patient felt well, but the amenorrhea continued.

Fig. 3. Calcareous body which seemed like a biliary calculus.

The analysis of these two cases could not but induce the presumption that we had come upon two different stages in the evolution of the disease, and that these two clinical pictures corresponded to one and the same process, tubercular peritonitis.

Truly, the strange calcareous helmet found covering the uterus in the first case had a remarkable similarity to the thickened epiploid layers wrapping that organ in the same manner in the second case. This peritoneal capsule or shell, undergoing the common process of caseation and calcification, would no doubt end by forming the calcareous helmet found in the first. In both, the omentum was adherent to the peri-uterine tumor found formed at its own expense, but while in the latter the adhesions were firm and it was clearly to be seen that they were peritoneal attachments, in the first case, that of the calcified helmet, they were feeble tracks easily separated with a piece of gauze. It is easy to imagine that the increase in weight of the calcareous mass had a constant pulling effect which, added to the closing up of the circulatory channels, already useless, would end by detaching it from the omentum and making it an independent entity. Calcareous tumors due to calcified glands are less rare, but not easily diagnosed, as in the following example.

Case 3. Mrs. M. N., aged 56, had complained of considerable edema of the right lower limb which compelled her to remain in bed, since standing or walking made it considerably worse. Under these circumstances she had a sudden hematuria, which gradually disappeared in a couple of days and which led to several diagnoses, almost all of them pointing out her heart as the cause of the edema. When the hematuria occurred, those who attended her suspected a carcinoma of the kidney. The examination of the patient was very difficult on account of her excessive obesity. It was to be noted that the predilection of the edema for one of the limbs indicated some local obstacle and that the hematuria was not accompanied by any other urinary symptoms. The x-ray examination carried out in order to visualize the bladder and ureters revealed the existence of calcified glandular masses which deformed the outline of the filled bladder and were located on the same side of the edematous limb, causing an obstacle to lymphatic circulation.

Case 4. Another case is that of a Syrian, aged 55, suffering from pain in the left loin,

alternating constipation, fetid diarrhea, melena, and roentgenologic signs of stenosis of the descending colon, all of which made us think of cancer. One day he expelled a calculus of cholesterin as large as a dove's egg, which allowed us to make a definite diagnosis. The biliary calculus, located at that point of the colon, had caused an erosion of the mucous lining and the symptoms of partial obstruction.

Everything seemed clear except that the x-ray pictures showed, besides, the shadow of a round body in the region of the gall bladder and this shadow persisted after the expulsion of the calculus. Were there in reality two stones, one of cholesterin, expelled, and the other calcareous, remaining? The examination did not reveal anything in the gall bladder region, neither did the subjective data. We made a cholecystographic study in series (See Figs. 3 and 4) which brought out revealing information: the body in question was not located within the gall bladder. By its shape and size and the lack of history and symptoms, we were not justified in supposing that it was a renal calculus. It was clearly inadmissable to assume that it lay within the lumen of the intestine, since such a voluminous body retained within the small intestine could not but cause serious disturbances. Consequently its location must be extra-visceral and by its opacity, shape, size and location in the peritoneal cavity, we were justified in surmising that it was a calcified mesenteric gland.

The finding of calcified glands in the abdominal cavity during autopsies is not rare but is rather frequent compared to the occurrence of calcified glands in other parts of the body. If, in accordance with the theory of Klotz (quoted by Colt and Clark[2]), we admit that the fats or caseous matter leads to the formation of calcic soaps which later on are replaced by phosphates and carbonates of lime, the above-noted frequency could be explained by the fact that the mesenteric glands receive a larger proportion of fats than those of other regions of the body, since they are nearer to the source, that is, intestinal absorption. Whatever may be the truth, the undeniable fact is that glandular calcification occurs with greater frequency in the abdominal cavity. Now, therefore, the tumors under discussion may have been formed by thickened epiploic layers which underwent caseation and were subjected to that process until they reached the stage of calcification, forming the calcareous objects which we have described.

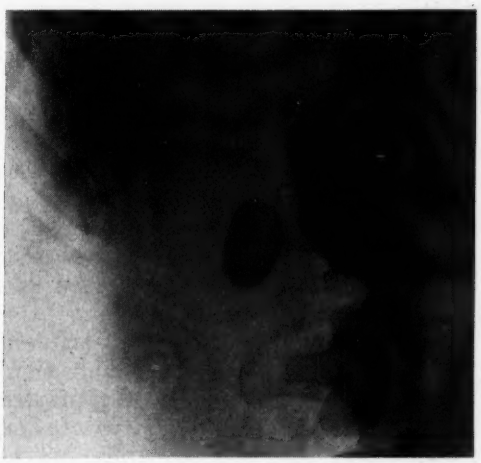

Fig. 4. The patient x-rayed at an angle to show the extra-vesicular location of the mass; this which established the diagnosis of calcified gland.

CONCLUSIONS*

It is claimed that in the process of peritoneal tuberculosis the thickened epiploon (omentum) may be found in wrapping layers upon such organs as the uterus, and that following the general course of events, this covering may reach caseation and later on calcification, giving rise to stony tumors.

The existence of intra-abdominal calcareous masses such as those herein referred to, as well as calcified glands, may give rise to confusion in diagnosis, which can be avoided by taking into account the possibility of their existence.

*It is gratifying to me to express my recognition to the roentgenologist, Dr. Theodore von Borries, whose devoted coöperation in these cases has been of real value and help.

In corroboration of the foregoing, clinical cases are described.

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SUMARIO

Se pretende que, en el curso de la tuberculosis peritoneal, el espesor del epiploon (omento) podrá encontrarse en lechos o capas que envuelven tales órganos como el útero y que en debido tiempo estos tejidos pueden llegar a caseación y más tarde a calcificación, dando origen a tumores duros (calculosos) como piedras.

La presencia de masas calcáreas dentro del abdomen como las aquí mencionadas, como también las glándulas calcificadas, dan origen a confusión diagnóstica; que puede evitarse si se toma en cuenta la posibilidad de su existencia.

Para confirmar lo que se deja dicho cuatro casos clínicos son citados.

RÉSUMÉ

L'auteur prétend que dans les cas de tubérculose péritonéale l'épiploon peut être enveloppé autour de certains organes tels que l'utérus, etc. Avec le temps l'épiploon devient le siège de caséation et eventuellement de calcification donnant naissance à des tumeurs pierreuses. Ces masses calcaires peuvent induire en erreurs diagnostiques: glandes calcifiées, etc. L'auteur rapporte quatre cas en rapport avec sa thèse.

Выводы

Констатировано, что при брюшном туберкулезе, брюшина иногда заворачивается в несколько слоев вокруг таких органов, как матка, и, что в течении времени туберкулезное перерождение и кальцификация могут образовать каменныя опухоли.

Если возможность существования этих масс, а также кальцифицированных брюшных желез, не принята во внимание, то постановка диагноза может быть очень осложнена. Для иллюстрации представлены клинические случаи.

Muscle Reinnervation* **

LT. COMDR. HARVEY E. BILLIG, JR., M.C.-V(S), U. S. N. R.
PASADENA, CALIFORNIA

RECOVERY of muscle power following nerve resuture or poliomyelitis proceeds for only a limited time to be followed by a constant degree of paresis.[1, 2, 3]

In embryologic development, muscle contractile tissue has differentiated from mesoderm prior to the outgrowth of innervating motor nerve from the invaginated ectodermic nerve tissue.[4]

Motor nerve axons arborize by division in the muscle to muscle fibers.[5] It is estimated that in the extraocular eye muscles a single axon may innervate but ten or so muscle fibers as compared with one hundred in the skeletal muscles. The knowledge of factors concerning regrowth of axons is constantly being enhanced.[6] It is now possible to draw conclusions from muscle action potential determinations. The anterior horn motor nerve cell with its axon, arborization and muscle fibers innervated is termed a motor unit.

Striated muscle fibers with their many nuclei atrophy when they lose their nerve supply but are capable of restoration if reinnervated.[7]

Experimental evidence in lower animals has shown that motor axons are capable of branching and arborizing to innervate a much larger mass of muscle fibers then normal.[8] Repeatedly experiments have shown that there is an increased branching of axons in regrowth after interruption.[9, 10, 11]

A study of factors involved in *motor nerve axon regrowth and arborization* with determination of resultant muscle fiber reinnervation is being made.[12] In rabbits the fifth, sixth and seventh lumbar spinal roots supply the motor axons for the femoral nerve to the femoral muscles producing extension at the knee. A symmetrical marked paresis of the femoral muscles can be produced by avulsing the sixth and seventh roots from the spinal cord and resecting them. In such prepared animals the femoral nerve motor branches on one side have been *crushed near the muscle at one place* by a small hemostat sufficiently to interrupt the remaining live axons but not to interrupt the sheath. The regrowth of axons to the muscle with arborization to muscle fibers has been tested *at various postoperative intervals in different animals* by means of isometric measurement of muscle force, muscle action potentials and histologic sections. An average increase in power of several times over that recorded on the control side has been obtained.

Using chiefly post-poliomyelitic *paretic muscles with residual constant muscle power,* reinnervation has been attempted in several thousand muscles in the human.

Two methods of producing axon interruption "neurotripsy" have been developed. General, spinal or intravenous anesthesia is used. Particular care is necessary in the administration of anesthesia to patients in whom there has been impairment of the respiratory center such as high poliomyelitis.

In the open surgical method the motor

*Presented at the Ninth National Assembly, United States Chapter of the International College of Surgeons, Philadelphia, Oct., 1944.

**This work was carried out with the coöperation of the Harlan Shoemaker Fund for Paralytics, Los Angeles, California.

nerve branches are bluntly traced as far as possible into the muscle and there compressed with a small hemostat just sufficiently to interrupt the enclosed axons, without disrupting the sheath.

In the closed surgical method a blunt instrument is kneaded through the muscle vigorously, deeply and repeatedly throughout its entire area. Attempt is made to spread the muscle apart in as many places as possible. This produces avulsion interruption of the maximum possible number of axon branches so as to provide the *greatest opportunity* for *increased branching* to muscle fibers *in regrowth.*

Large arteries and nerves are avoided. The number of muscles treated at any one time depends upon the general condition of the patient. A thorough procedure is one in which no area of the muscle has been missed and the part feels pulpy in consistency.

Both electric and compressed air eccentric driven instruments have been developed to replace the earlier hand type. In no instance has delayed shock followed the muscle trauma, careful tests for this having been carried out.

The patient leaves the hospital one or two days postoperatively and is urged to be *up and about as preoperatively,* using braces if necessary. There have been no serious complications, however, tenderness, ecchymosis and induration usually follow the closed procedure. These subside with the use of contrast baths, massage and passive motion. Residual interstitial fibrosis does not develop. In instances where palpable "knots" persist in the muscles past the first month, deep kneading effects their rapid disappearance. These complicating signs and symptoms following the closed surgical procedure have been of negligible degree since the institution of use of the power-driven instruments.

Preoperative repeated analysis of muscle power serves to establish the constancy of the degree of paresis. Postoperative frequent analysis of power serves to ascertain progress. Such analysis of muscle power includes the use of galvanic and faradic electrical currents, muscle action potentials, clinical trial ability tests, Lovett system of muscle grading modified to represent the power range in seven grades, actual power of muscle spring scale measurements.

Results as determined by the above methods of analysis are as follows:

1. On the average there is in the muscle a definite increase in power sufficient to be of practical value. Following the open surgical method a mean increase in power was obtained of sufficient amount to warrant the procedure in muscles up to the preoperative grade of poor. Muscles of grade higher than poor showed a mean increase in power insufficient to justify the procedure. For example, in one series of 251 selected arm muscles the lower graded muscles showed a mean increase of +1.31 grades. In the higher preoperative grades the mean increase is less the higher the grade, so that in muscles higher graded than poor there begin to be occasional losses of power. Thus in the "fair" graded muscles a mean loss of .26 grades resulted. This curve is observed in all series operated on by the open surgical method.

In the closed surgical method a mean increase in power was obtained in one series of 702 arm muscles of .65 grades. By this method the possibility of losses of power is avoided. Higher graded muscles do not respond as well with increases in power as do the lower graded ones.

2. Control muscles do not improve in power even though in the same extremity and subjected to the same period of physical therapy. For example, 310 leg muscles showed a change of only .06 grade and 270 arm muscles a change of

.004 grade. Therefore the physical therapeutic effect on residual paretic muscles is nil.

3. Muscle action potentials show changes to coincide with the increases in power as determined by other methods.

4. In those operated on by the open surgical method, improvement in muscle power is greatest when the nerve interruption is performed closest to the muscle fibers. In those operated on by the closed surgical method improvement is greatest where muscles overlay bone and a better spreading apart of the muscle can be obtained.

5. The immediate postoperative effect of the open surgical method is total loss of power. The closed method does not cause this immediate loss.

6. The mean improvement at various postoperative time intervals in one series of selected muscles is:

	Manual	*Surgical*
1 month	+.63	—.11
3 months	+1.06	+.75
6 months	+1.23	+1.20
9-12 months	+1.31	+1.54

7. Age of the patient up to 40 years has no influence on the result. Above that age the increases in muscle power are 20 per cent less.

8. Duration of the paretic state has no effect on the increase in power.

9. Cranial nerve supplied muscles show increases in power similar to that obtained in skeletal muscles. Satisfactory increase in power of the facial muscles was obtained in a case where the seventh nerve had been lost and replaced by a transplant graft of the eleventh.

10. Repeating the procedure by open surgical method following an initial open surgical procedure has not been tried. Repeating the procedure by closed surgical method *following initial open surgical or closed surgical application* results in improvement in power but very little improvement in muscle grade.

11. As muscle power increases there is also an increase in size of the muscle, and the atrophy correspondingly disappears.

12. Considerable circulatory improvement is usually noted in the extremity operated on.

Observations pertinent to these studies include:

1. Testing of power and extent of motion must be accomplished by separate methods. Power may increase over a restricted arc of the possible passive extent of motion without increasing the extent of that arc. Hence the various systems of clinical muscle grading based on extent of motion are not satisfactory as a test of power. For example, the overall, bilateral increase in power of the quadriceps, gluteus maximus, plantar flexors of the foot and dorsiflexors of the foot measured by spring scale for the year following the open surgical procedure was from 22 pounds to 93 pounds, a matter of 323 per cent. The measurement by muscle grade however reveals no change except for one gluteus maximus from T to T+ inasmuch as muscle grading is based chiefly on extent of motion. During the year *following a repeat by closed surgical method* on these same muscles, increases in power were as follows:

	Right	*Left*
Quadriceps	24%	50%
Gluteus maximus	30%	19%
Plantar flexors of foot...	103%	59%
Dorsi flexors of foot.....	118%	96%

Again the measurement by muscle grading reveals no change except for one Gluteus Maximus from T+ to P— and one Quadriceps from P— to P.

2. The shortening extent of a muscle is among other things a product of the number of motor units present.

3. Very seldom does a given muscle produce by itself a particular joint motion. These are produced by a combination of motor units having little relation to a particular muscle. Thus the motor units are the basis for the kinetic function of muscles. For example:

a. The motor units in the posterior deltoid muscle must cease function when those in the anterior deltoid start function as the outstretched arm is swung forward.

b. Improvement in nonop. med. hamstrings when femoral group, glutei and gastrocnemius not done..±.00
Improvement in nonop. med. hamstrings when femoral group, glutei and gastrocnemius are done..+.77
Improvement in nonop. lat. hamstrings when femoral group, glutei and gastrocnemius not done..±.00
Improvement in nonop. lat. hamstrings when femoral group, glutei and gastrocnemius are done..+.5

Thus by muscle grade an obviously false picture is presented and the increases in power are incorrectly designated.

4. Anatomic variations in the attachments of tendons must be considered. In the fingers the *extensor longus digitorum tendons* frequently attach to the middle phalanx and occasionally to the distal phalanx. In determination of the share of power of extension of the phalanges at the several joints *attributed to the lumbricales and long extensors* this factor is important. In a large percentage of individuals the *extensor longus hallucis tendon* attaches to the proximal phalanx. In an analysis of toe function in expert professional toe dancing, it is noted that only those individuals in whom this extensor attaches to the distal phalanx are able to perform adequately without box shoes.

5. The interrelation of function of the various muscles considering the extremity and body as a whole must be carefully kept in mind.[13] Frequently an increase in power in one muscle may be otherwise improperly credited to another. For instance, the flexor muscles in the forearm having a flexing effect at the elbow because of their attachments past the elbow to the humerus *have an interrelated function* with the triceps which passes both the elbow and shoulder joints and the biceps and other flexor muscles of the elbow some of which also pass the shoulder joint.

6. Residual contracture of the fascial ligamentous structures producing *restriction of motion* and *peripheral nerve compression type irritation* interfering with proper nerve muscle function must be corrected by adequate fascial ligamentous stretching.

7. Muscle training should follow a particular sequential pattern of education through active function in the use of the new balance of power. This necessary sequential pattern is best observed in the stages of *development of the use of the muscle through use* in the growing infant.[14] Thus in reëducation for *coördinate use of a new balance of power* made necessary by the onset of paresis in a portion of the muscles, the following sequential steps in training are necessary:

(a) The individual separate use of the available motor units to produce power for each particular joint motion with all other motor units inactive.

(b) The coördination of use of such power to produce a specific joint motion with that producing the other motions in the same joint.

(c) Coördination of the use of power to produce the various joint motions in one joint with that available to produce the various joint motions in adjacent joints.

(d) Coördination of the use of (c) extended to the whole body and extremities as in gait training.

8. Training in the coördinated use of muscle power can be materially aided by routine exercising to rhythm. During the early years of growth there may be a lag in development of the ability to properly coördinate the use of the muscles. This results in the clumsy, physically inept adult who, though mentally alert, shies away from sports because he cannot handle himself well enough to acquire the dexterity to enjoy them. If such individuals acquire paretic muscles, the muscle reëducation is unsuccessful unless exercises guided by a metronomic type of rhythm are instituted.

9. In certain individuals with paretic muscles the disability is aggravated by increased tone frequently associated with instability of the autonomic nervous system. As a prerequisite for muscle reëducation in such individuals muscular relaxation must be obtained. This can be accomplished by routine, very slow, passive exercising for a period prior to each muscle training session.

SUMMARY

1. A means of increasing power in paretic muscles is presented.

2. Factors necessary to consider in analysis of nerve muscle function are listed.

3. Methods of muscle reëducation important for coördinated function of a new balance of power are outlined.

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SUMARIO

1. Se presenta un método de aumentar el poder de los músculos parestésicos.

2. Los factores necesarios en el análisis de la función de los músculos de los nervios son enumerados.

3. Los métodos de reeducación de los músculos que tienen importancia para la función coordinada de un nuevo equilibrio de poder son descritos.

RÉSUMÉ

1. On présente un moyen d'augmenter le pouvoir des muscles parétiques.

2. Les facteurs nécessaires à la considération d'une analyse de la fonction des muscles nerveuses se sont données.

3. Les méthodes de la rééducation musculaire aussi importantes pour la function d'une nouvelle balance de pouvoir coördonnée sont préconisées.

Выводы

(1) Даны способы укрепления частично парализованных мышц.

(2) Дан список факторов, которые необходимо принять во внимание при анализе нервно-мышечной функции.

(3) Дана методика перевоспитания мышц с целью координации их с новой системой сил.

The Surgical Significance of the Anatomical Layers of the Gastro-Intestinal Tract*

WALTER C. BURKET, M.D., F.I.C.S.
EVANSTON, ILLINOIS

ALTHOUGH surgeons are daily suturing the gastro-intestinal tract, it is apparent that the surgical significance of its anatomical layers is still grossly misunderstood. Not only in surgical textbooks but also in articles appearing in our leading surgical journals today, descriptive details of surgical technic reveal confusion of this most fundamental knowledge. Consequently it seems important to review the subject and especially to emphasize the rôle of the submucosa. The errors relate to matters not only of the histology, but to the thickness and physical qualities of the submucosa.

The accompanying drawing (Fig. 1) of a cross section of the intestinal wall is based upon Dr. Franklin Payne Mall's accurate determination of the relative thickness of the intestinal layers. Of all the layers of the intestine—serosa, longitudinal muscle, circular muscle, submucosa, muscularis mucosa and the mucosa—it is the submucosa which most concerns the surgeon. No other layer of the intestine can be depended upon to hold a suture. Between the submucosa and the glands of Lieberkühn practically nothing intervenes. Therefore, when the intestinal needle once enters the mucosa, for all practical purposes it enters the lumen of the gut. It is an easy matter to isolate the submucosa. The outer muscular coats strip off readily and the mucous membrane can be easily scraped off with a knife. One may also isolate the submucosa by engaging the intestines firmly between the handles of a pair of scissors then pulling the intestines through the handles. The handles allow only the submucosa to pass between them and strip off the serosa and the muscular layers on one side and the mucosa on the other. The submucosa is not torn by such rough handling, since it is an exceedingly tough, fibrous membrane. It is air-tight and water-tight and is the skin in which sausage meat is stuffed. Catgut is made from the submucosa of the sheep. One may practice picking up shreds of the submucosa with intestinal needles and test the strength of the submucosa. A stitch which includes only the serosa and the muscular layers will pull out as readily as from putty and certainly would not hold an anastomosis, nor closure of an intestinal fistula, nor an invaginated gut-end. A stitch in the mucosa will pull out also. If a bit of submucosa is included with these other layers the stitch will hold. A needle, on being pushed vertically through the wall of the intestine, meets with considerable resistance when it reaches the submucosa. Still greater resistance is encountered if one tries to pass the needle horizontally through the meshes of the submucosa. A delicate thread of the submucosa is very much stronger and better able to hold a stitch than is a coarse shred of the entire thickness of the muscular and serous coats. The force required to enter the

*Editor's note: The paucity of authors stressing the importance of the anatomical layers of the gastro-intestinal tract in intestinal surgery, particularly of the submucous layer, makes this article very timely, and while to some it may appear elementary, it is the neglect of elementary things which often leads to disastrous consequences.

submucosa with the blunt rounded end of the needle is sufficient to perforate it with a distinct jerk. To the sharpened end of the intestinal needle sufficient resistance is offered by the submucosa to be easily appreciated. By practice the surgeon will develop a sense of respect for the submucosa and a feeling of security that his sutures will hold, because he knows that he has included sufficient fibers of the submucosa in his stitches.

Dr. Samuel Gross in 1843 was the first to mention the submucosa. But in subsequent years its very existence was overlooked altogether until the studies of Dr. Franklin Payne Mall and Dr. William Stewart Halsted[2] in 1887 clearly showed that it was the submucosa and only the submucosal layer that could be sutured. Dr. Halsted throughout the remainder of his life continued to emphasize this both in his writings and teachings.

The intestinal wall cannot be sutured layer by layer. The serosa (peritoneal coat) will not hold a suture; as will neither the muscular layers nor the mucosa. If one realizes that the wall of the intestine must be magnified to a thickness of 4 to 5 cm. in order to be able even to represent the serosa by a fine pencil stroke, one finds it hard to understand that surgeons should ever have supposed that they were including only the peritoneum (serosa) in their stitches. It is practically impossible to suture the serosa; yet not infrequently in descriptions of operative technic the serosa is described as sutured in a separate layer. The serosa is important to the surgeon because of its ability to seal off the intestinal wound when serosa is approxi-

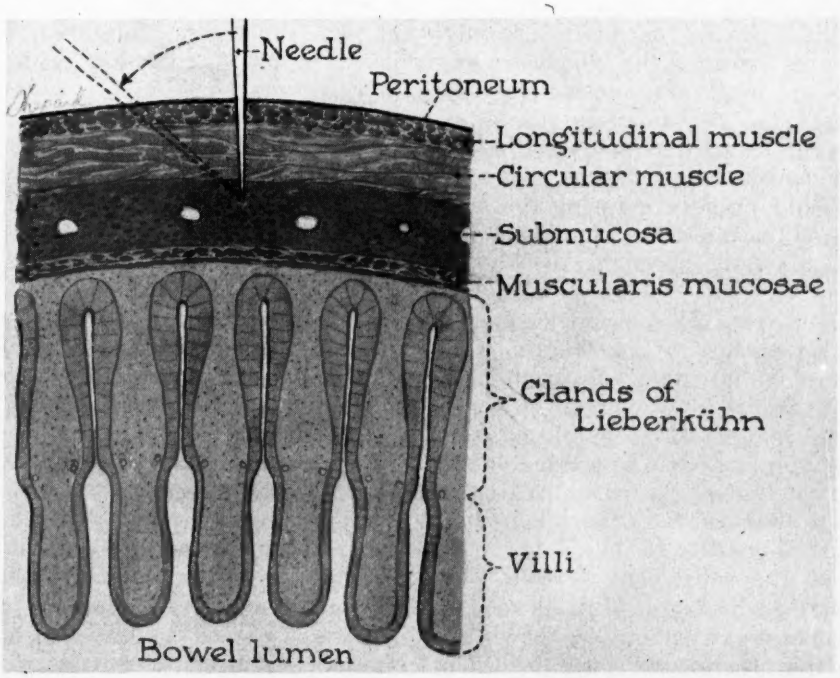

Fig. 1. Cross section of the intestinal wall, showing relative thickness of the intestinal layers, serosa, longitudinal muscle, circular muscle, submucosa, muscularis mucosae and mucosa. Intestinal needle penetrates to the submucosa.

mated to serosa. Sutures of the muscular coats tear out. Sutures which penetrate the mucosa are for all intents and purposes exposed to the intestinal lumen contents and are endangered to contamination and spread of infection from the intestinal bacteria to the suture line. In order for a suture of any of the layers of the intestinal wall to hold, the suture must include a bit of the submucosa (fibro-elastic layer). Often writers have made no distinction between the submucosa and the mucosa in detailed descriptions of operative technic. Often only the term mucosa has been used when actually the submucosa was in mind.

The surgeon may readily learn to sense the submucosa with the point of his intestinal needle and will know when his needle is picking up the submucosa, and to include a part of it in the stitch without entering the lumen of the gut. With a little practice one learns not only to pick up a thread of the submucosa but to press the needle along in the plane of this coat. The resistance in the latter case may be as great as that experienced in taking subcuticular stitches. The surgean should practice suturing the submucosa on the intestines of animals and develop his skill thoroughly before attempting to suture human gastro-intestinal structures. This would lessen the surgical tragedies of peritonitis from leakage of suture lines (perforation of gut wall), and the blowing out of closed intestinal stumps (such as closed duodenal stump in gastric resection) due to tearing out of invaginating sutures which were not placed in the proper intestinal layer. It is possible to take stitch after stitch of the submucosa without perforating the submucosa. Just as soon as the submucosa is perforated, the suture lies in the mucosa and consequently is exposed to soiling and fecal contamination from the intestinal lumen. Every surgeon should satisfy himself with this important fact either by practicing on fresh human intestines at the autopsy table or on dog's intestines in the animal laboratory, or on fresh pig's intestines from the slaughter house. The surgeon should train his hand by practice with a straight milliner's needle or a curved round intestinal needle to know the feel of picking up and sewing the intestinal wall so as to pick up just a holding stitch of submucosa without penetrating the mucosa. Let the surgeon anastomose the intestine and then open the gut and scrape off the mucosa and see whether his stitches are exposed. Or he may draw the opened gut between the handles of the scissors and strip both sides clean, leaving only the submucosa with the sutures clinging to a delicate shred of this very tough tissue. According to Edmunds and Ballance[1] in their measurements to determine the relative thickness of the submucosa and the muscular layers in man and the dog, the muscular layer is very much thicker in dogs than man, but the reverse is true in the case of the submucosa. Eventually the surgeon will learn to sew without entering the mucosa, thus improving his operative technic.

The chief danger of infection of the peritoneum is from the passage of the intestinal contents (bacteria) into the peritoneal cavity subsequent to the operation. Penetration of the suture to the intestinal lumen is a contributory factor. The occurrence of ulceration or necrosis of the intestinal wall at the site of the suture permits escape of intestinal contents and affords a soil suitable for the lodgment and growth of bacteria. After necrosis of the serosa and subjacent intestinal coats (even when the necrosis does not extend to the mucous membrane), bacteria (because of suture perforation), which otherwise would prove harmless, may reach the diseased tissue and find suitable conditions (ne-

crosed tissue) for their development. In order to obtain a complete and firm closure of an intestinal opening, formerly it was customary to turn in several rows of sutures of the intestine one over the other, thus turning in a considerable extent of the intestinal wall, the circulation of which was thereby greatly impaired. The extent of the tissue slough of the intestinal wall was increased with consequent greater danger of infection and obstruction to the passage of the feces which accumulated at or above the site of the suture, thus increasing the tension on the sutures and endangering their separation. Surgeons know now that a sufficiently firm closure of the intestinal wound may be made without so much inturn. Although recovery may occur after penetration of the intestinal lumen, the penetration may lead to serious consequences and should be carefully avoided. It is important to appreciate the moment when the needle point comes in contact with the submucosa. By observing this one can guide the needle so as to include a bit of the submucosa without penetrating the mucous coat. Of no less importance in guarding against peritoneal infection is the necessity of including in the final row a bit of the submucosa.

Stitches which do not enter the mucous coat become ultimately subperitoneal loops (long before the turned-in-flange has flattened out). Uninfected, they are cast outwards and do not discharge into the lumen of the intestine. Perforating stitches usually ulcerate into the bowel. One may find perforating stitches hanging in the lumen of the bowel weeks after the anastomosis and even after the inturned flange has nearly disappeared. There is an infected sinus formed by the tract of these stitches until they are released into the lumen of the bowel. These infected perforating stitches show an inflammatory reaction to the bowel wall or even small abscesses about the thread. Some of the penetrating stitches may cut their way outward and after they have pulled through the mucosa the sinus tract may become sealed from within and the suture pass on to the peritoneum in a clean way. The more perfectly the intestine heals, the more stitches come to the peritoneal surface and the fewer omental adhesions form (even no adhesions may form). If we remember that every perforating stitch is a source of danger, however slight, as well as a menace to the circulation, our efforts will be directed toward the suppression of unnecessary stitches and the cultivation of the sense which makes possible the appreciation of the resistance offered by the submucosa to the needle's point.

In the Fredet-Ramstedt operation for pyloric stenosis in infants the tumor is divided down to the submucosa, and not to the mucosa as articles on operative technic so frequently state. Should one divide the wall of the stomach or the duodenum to the mucosa, the gut would be perforated as there would be nothing to hold. The submucosa is a firm fibrous layer that is not easily perforated with a blunt instrument. A sharp instrument or a scalpel will quickly cut through. This is an important point to remember in doing the Fredet-Ramstedt operation. Another pertinent detail is to locate the submucosal layer on the duodenal side as well as the gastric side of the pyloric tumor so as to split the pyloric tumor from both ends and thus be certain safely to divide the last tumor muscle fibers without perforation of the gastro-intestinal tract.

SUMMARY

(1) The submucosa is the most important gastro-intestinal layer in surgical technic.

(2) It is impossible to suture the

serosa alone or the intestinal wall in layers, as frequently advised by authors.

(3) Stitches which include nothing but the serosa and muscular coats alone tear out easily and are not to be trusted.

(4) Each stitch should include a bit of submucosa. A thread of submucosa is much stronger than a shred of the entire thickness of the serosa and muscularis.

(5) It is not difficult to familiarize one's self with the resistance furnished by the submucosa to the point of the needle and it is quite easy to include a bit of this coat in each stitch as to suture the serosa and the muscularis alone, and to take up a small bit of the submucosa without entering the lumen of the intestine.

(6) One can suture the submucosa stitch after stitch without perforating the submucosa or entering the mucosa.

(7) If the submucosa is perforated, the intestinal lumen is almost certainly entered.

(8) Sutures which do not perforate the submucosa or penetrate the lumen of the intestine eventually become subperitoneal, while sutures which perforate the bowel usually ulcerate through and are discharged into the lumen of the intestine.

(9) The chief danger of peritoneal infection is from perforating intestinal sutures or leakage from sutures which do not hold, or the blowing out of invaginated stumps, usually because the sutures have not been placed in the proper layer, *i.e.*, they have not included a bit of the submucosa.

10. In the Fredet-Ramstedt operation on infants the pyloric tumor is divided down to the submucosa and not the mucosa.

(11) Surgeons would do well to practice the suture of fresh human intestine at the autopsy table or dog's intestines in the animal laboratory or fresh pig's gut from the slaughter house so as to master the suture of the submucosa before undertaking human abdominal surgery.

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SUMARIO

(1) La submucosa es el tejido o capa gastro-intestinal más importante, en la técnica chirúrgica. (2) Es imposible suturar la serosa solamente o toda la pared intestinal por láminas, como lo recomiendan ciertos autores. (3) Suturas que incluyen solamente la lamina serosa y la muscular se rompen facilmente y no se pueden confiar. (4) Cada sutura deberá incluir algo de la submucosa. Un hilo de la submucosa es más fuerte que una porción de las láminas serosa-muscular. (5) Es nada difícil familiarizarse con la resistencia que ofrece la submucosa a la punta de la aguja y es fácil incluir algo de esta lamina con cada sutura, con más ventaja incluyendo algo de la submucosa sin penetrar el canal intestinal. (6) Se puede cerrar la submucosa de puntada a puntada sin perforarla y sin entrar la mucosa. (7) Si se traspasa la submucosa casi siempre se penetra el canal intestinal. (8) Suturas que no traspasan la submucosa y no penetran el canal intestinal quedan subperitoneal, mientras que suturas que penetran el canal intestinal generalmente se ulceran dentro de la cavidad o canal intestinal. (9) El principal peligro de in-

fección peritoneal procede de suturas que perforan el intestino con filtración y reparacíon debido a la falta de seguridad o por suturas que se separan por que no fueron propiamente inclusivas de la submucosa. (10) En la operación de Fredet-Ramstedt en infantes el tumor pilórico se divide incluyendo la submucosa y no la mucosa. (11) Cirujanos pueden practicar la sutura intestinal durante autopsias o trabajo de laboratorio en los intestinos de perros y demás para adquirir habilidad y dextreza antes de hacer la cirugía abdominal humana.

RÉSUMÉ

1. Dans la technique chirurgicale, la sous-muqueuse est la couche la plus importante.

2. Il n'est pas possible de suturer la séreuse seule ou les différentes couches intestinales séparément ainsi que le recommandent beaucoup d'auteurs.

3. On ne peut pas se fier à des points qui n'interessent que la séreuse et la musculeuse seul. Ces points déchirent facilement la paroi intèstinale et se détachent.

4. Chaque point doit inclure un peu de la sous-muqueuse. Les points intéressant la sous-muqueuse sont plus forts que ceux qui intéresse toute l'épaisseur de la séreuse et de la musculeuse.

5. On peut inclure dans le point la sous-muqueuse sans léser la muqueuse.

6. Si la sous-muqueuse est perforée, la lumière intestinale est presque certainement envahie.

7. Les sutures qui ne perforent pas la sous-muqueuse ou qui ne pénétrent pas la lumière de l'intestin deviennent avec le temps sous-péritonéales; celles qui pénétrent la lumière de l'intestin ulcèrent la muqueuse et sont jetées dans l'intestin.

8. Le grand danger d'infection péritonéale est les sutures qui perforent la paroi intestinale ou le relachement de sutures permettant l'échappement du continu intestinal dans la cavité péritonéale.

9. Dans l'opération de Fredet-Ramstedt sur les enfants pour tumeur pylorique, l'incision intèresse la sous-muqueuse et non la muqueuse.

10. Les chirurgiens devraient s'entraîner pour la suture intestinale à la table d'autopsie, sur des chiens ou sur des boyaux de porcs afin de passer maître dans la suture de la sous-muqueuse.

Выводы

(1) В желудочно-кишечной хирургии подслизистая оболочка является самым важным слоем.

(2) Совершенно невозможно сшить только серозную оболочку (peritoneum) или же сшить кишечную стенку слой за слоем, как советуется многими авторами. (3) Швы, включающие только серозную и мышечную оболочку, легко вырываются и являются очень ненадежными. (4) Каждый шов должен включить часть подслизистой оболочки. Одно волокно подслизистой оболочки гораздо крепче чем вся толщина серозной и мышечной оболочек. (5) Очень легко разпознать сопротивление оказываемое подслизистой оболочкой острию иголки. Включить немного этой оболочки в каждом шве так же легко, как и сшить только серозную и мышечную оболочки. Но захватить подслизистую оболочку надо так, чтобы не проникнуть внутрь кишки. (6) Возможно сшить подслизистую оболочку шов за швом без перфорации этого слоя и без захватывания слизистой оболочки. (7) Если произошла перфорация подслизистой оболочки, то безусловно иголка проникнула внутрь кишки. (8) Швы, которые не перфорировали подслизистую оболочку и не вошли внутрь кишки, позже делаются субперитониальными. Швы же проникающие в кишку образуют язву и выделяются внутрь кишки. (9) Опасность перитонеальной инфекции создается, главным образом, перфорирующими кишечными швами, или же просачиванием в местах, где швы не держутся, или же раздутьем внедренных

складок кишечнаго обрубка, образованных неправильно сделанными швами, т. е. швами которые не захватили слизистую оболочку. (10) При операции Фредет-Ранстедта на младенцах, опухоль Pyzorus'a разрезывается до подслизистой а не до слизистой оболочки. (11) До предпринятия этого шва в человеческой брюшной хирургии, полезно чтобы хирург упражнялся в накладке этого шва на свежем человеческом кишечнике при трупном вскрытии, или же на собачьем кишечнике в хирургических лабораториях или же на свежем свинном кишечнике в бойнях. Таким образом он может усовершенствоваться в накладке этого подслизистаго шва.

BOOK REVIEWS

Dental Treatment of Maxillo-Facial Injuries. W. Kelsey Fry, P. Rae Shepherd, Allen C. McLeod, Gilbert J. Parfitt and F. R. Fraser. 443 pp., profusely illus. $6.50. J. B. Lippincott Co., Philadelphia, 1944.

In approaching this text on maxillo-facial injuries and the dental treatment thereof, one feels that the authors, one of whom gained a vast experience in the past war, could not write anything but what would be of inestimable value, based on scientific experience and results.

Like all British texts, it is extremely readable and demonstrates clearly how many trivialities in major repair can be of the utmost importance to a good end result. The chapter on bone repair and complications is particularly impressive. This portion of the work will help the oral surgeon as well as the general plastic surgeon.

In the discussion of the different types of fractures I feel that too little stress has been laid on the modern fixation splint, as the wiring procedures, which are thoroughly demonstrated and approved, do not, in my opinion, seem as applicable in extreme facial injuries where the odentulous mouth has to be dealt with. The attention to detail in each case seems to be very important, and I infer that authors are more concerned with a good compensatory function than with a good cosmetic result in the permanent repair.

In summarizing the many good features of this book, I feel that the authors have portrayed for us in detail all that pertains to that better class of surgical and dental treatment. I have not hesitated to recommend it to my senior students for review and reference.

Varicose Veins, Hemorrhoids and Other Conditions; Their Treatment by Injection. R. Rowden Foote, Physician-in-Charge, Injection Clinic, Royal Waterloo Hospital, London. 119 pp., 54 illus. H. K. Lewis & Co., Ltd., London, 1944.

This compact volume on the treatment of varicose veins and hemorrhoids by injection is a valuable addition to the literature on the subject. The author feels that the pendulum has swung too far in the direction of surgery, and that many cases can be treated by injection alone. This is a healthy outlook and an important one to impress on the minds of modern practitioners. The author is very enthusiastic about the injection treatment of hemorrhoids, and this chapter is particularly well done. Caution should be used, however, in accepting his recommendations for its use in the treatment of hydrocele.

The reviewer questions the dogmatic statement that the sapheno-femoral junction is two inches below Poupart's ligament. Although this is true in most instances, he has noted quite a bit of variation in his dissections and surgery as to where this junction may be located. Fig. 5 on page 7 clearly illustrates the variations in the tributaries of the internal saphenous vein and demonstrates the erroneousness of the present belief that five such tributaries must be found.

Chapter III, written by Rodney Maingot, on opertive treatment of varicosities is excellent. The reviewer was especially happy to note the writer's recommendation that varicose vein surgery should be done in the operating room, and not be pushed aside as a dispensary procedure.

On the whole, the book is very well done, containing valuable informative diagrams on the anatomy, tests and procedures. It is highly recommended to every physician and surgeon interested in sclerotherapy.

Reconstructive Surgery of the Eyelids. Wendell L. Hughes, M.D. 60 pp., 36 pl. C. V. Mosby Co., St. Louis, 1943.

This compact but comprehensive volume, which was the author's thesis for admission to the American Ophthalmological Society, presents an extensive and complete historical survey of the subject from the time of Celsus until the present. An excellent bibliographical survey supplements the text. Numerous fine photographs and diagrammatic sketches of operative procedures enable the beginner or the advanced student of the subject to acquire information on operative technics both past and contemporary.

The author presents his own method of blepharopoiesis with case reports and photographs, pointing out steps in technic that gave imperfect results. In addition the author refers the reader to seven motion pictures depicting the cases and procedures cited in the text.

Extensive name and subject indices supplement this desirable volume.

Urological Surgery. Austin I. Dodson, Professor of Urology, Medical College of Virginia. 768 pp., 576 illus. $10. C. V. Mosby, St. Louis, 1944.

Surgical problems of everyday urologic practice are excellently presented in this new volume which provides a valuable supplement to existing works on the principles and practice of urology. Designed to fit the needs of the general surgeon, the diagnosis and pathology of the urogenital system are touched upon as an aid to the surgeon who lacks basic training in urology.

The anatomy of the urogenital tract, examination and pre- and postoperative care introduce the discus-

(Continued on page 502)

The Use of Praeputium Skin in "Structive" Surgery

J. F. S. ESSER, M.D., F.I.C.S. (HON.)
MONACO

IN this paper is presented for the first time the use of the praeputium in "structive" surgery, which has been used by the author on several occasions with marked success. The praeputium is the only skin that is more than superfluous; *i.e.*, it increases the danger of infection. This is the reason why Moses wisely ordered circumcision as a religious act, since this is a sanitary precaution and lessens the danger of infection. Such was the opinion also of Mohammed and other leaders. In Europe and in the Northern countries generally, circumcision is not prevalent because the danger of infection is less than in hot countries.

I introduced the use of the praeputium for restoration of different defects anywhere on the body, limbs or face, and also for holes in the palate and especially nose defects. I never transplanted it freely, but I always attached it pedicled either to the palm of the first or fifth metacarpus, to tips of the fingers or to the wrist. After it had grown together at the place of attachment, it was cut from the penis and brought to the desired place, attached to the existing or purposely made wound. After it had healed there, it was separated from the hand.

One important advantage is that the praeputium may be employed by the general surgeon, who is inexperienced in cutting pedicled grafts, since it is flexible and suits any form of wound. It may be used for grafts on penis, urethra and bladder (ectopy).

I give the following advice to those who intend to repeat these operations: Tell the patient never to mention that the praeputium has been used for his face. I once had a case in which I made a new nose for a soldier. When he told his comrades that his nose had been made from praeputium, they never ceased to tease him about it and to make offensive remarks and jokes about the reactions on his fiancée. He was so incensed by this that after several months he insisted on having another nose made.

Patient *K* had lost almost his entire

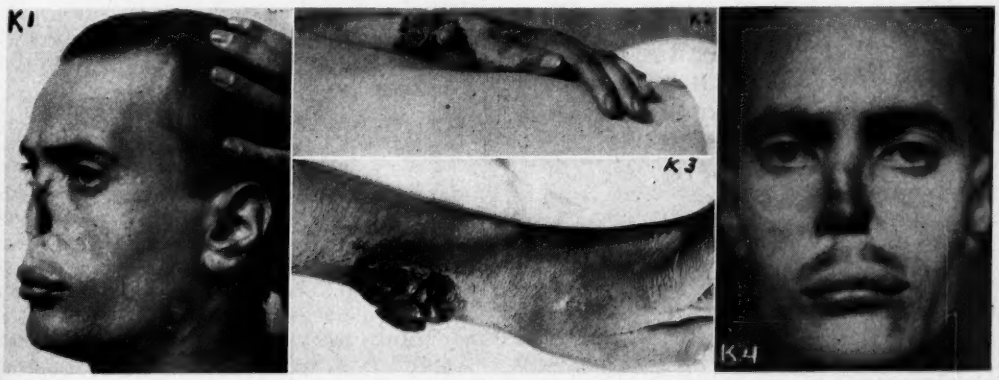

Fig. K 1. Patient who has lost almost entire nose. 2. Position of the praeputium united with the wrist and still retaining a pedicle to the penis. 3. Praeputium attached to the wrist only. 4. Praeputium already forming the nose.

nose (Fig. K1). Fig. K2 shows the position of the praeputium united with the wrist and still retaining a pedicle to the penis. Fig. K3 shows the praeputium attached to the wrist only. In Figs. K4 and K5 we have the praeputium already forming the nose.

Patient *A* had lost his right eye and the whole of his nose (Fig. A1). An attempt had been unsuccessfully made elsewhere to construct his nose. A part of this flap had resisted necrosis but was not sufficient to make a nose. Fig. A2 shows the application of the praeputium which entirely covers the new nose. Corrections had still to be made on the nose, upper lip and eyelid when I went away.

Fig. A 1. View of patient who had lost his right eye and the whole of his nose. 2. Application of the praeputium, which entirely covers the new nose.

Patient *KO* had the tip of the nose missing. It was restored by a pedicled praeputium transplantation, as seen on photograph KO 1-2.

SUMMARY

Use of the praeputium skin is recommended for purposes of reconstructive surgery for defects anywhere on the body, limbs or face. However, the patient is cautioned never to mention that praeputium skin has been used for the face. Three cases of its successful use are presented.

KO (1 and 2). Restoration of missing tip of the nose by a pedicled praeputium transplant.

SUMARIO

El uso del prepucio se recomienda en la cirugía de reconstrucción de los defectos donde se encuentren en el cuerpo, extremidades y de la cara.

En todo caso se debe advertir al paciente no hacer mención que la piel de prepucio fué empleada para defecto de la cara. Tres casos de uso y de éxito son presentados.

RÉSUMÉ

L'emploi du prépuce est recommandé pour la chirurgie reconstructive de défauts de différentes parties du corps, membre ou figure. Le malade maintiendra sous silence l'origine de la greffe. L'auteur présente trois cas.

Выводы

Рекомендуется употребление кожи крайней плоти (prcputium) для восстановления недостатков тела, конечностей и лица. Однако, необходимо предупредить пациента, никогда не упоминать, что кожа крайней плоти была употреблена для лица. Описаны три случая успешнаго употребления этой кожи.

The Nature of Medical Organization

DR. MORRIS FISHBEIN
EDITOR, JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

(Convocation Address delivered at the Ninth National Assembly, Philadelphia, Pa., Oct. 3-5, 1944)

Dr. Morris Fishbein,
Editor *Journal of the American Medical Association.*

AT Naples in Italy in 1560 an organization of scientists met for the first time. At least this was the origin of scientific societies unless we conceive that the Hippocratic school on the island of Cos was in essence a scientific medical organization. The first scientific society to be formed in Great Britain was established in 1660 and began to publish its transactions in 1664. Here were published the first important works of Leeuwenhoek and Malpighi.

The first medical congress was opened at Rome on March 10, 1681, and lasted until June 8, 1682, with three or four meetings each month and with a total attendance of 46 physicians.

In the United States the first medical organizations appeared in Boston in 1735, New York City in 1749 and Philadelphia in 1765, after which they followed rapidly in many eastern and New England states.

As the science of medicine advanced and as specialization appeared, organizations began to be created for the discussion of specialistic subjects. Long before the special societies were formed, however, the American Medical Association appeared in 1847—just fifteen years after the organization of the British Medical Association. The chief purpose of the organization of the American Medical Association was the improvement of the then disgraceful status of medical education in the United States. With the formation of the American Medical Association came the adoption of "The Principles of Ethics"—the American form of which was drafted by Isaac Hays, first editor of the American Journal of Medical Sciences, in Philadelphia.

These are the simple beginnings of the organization of physicians in the United States. An analysis of medical organization in the United States shows our medical profession is probably the most completely organized group in the na-

tion, if not even the most over-organized of all occupations.

Our fundamental organization for scientific, economic and representational purposes is the county medical society. The American Medical Association is the most democratically organized group in the nation. Its county medical societies elect representatives to the state medical societies and they, in turn, elect their own representatives to the House of Delegates—the election being wholly on a proportional basis. In the House of Delegates are made the policies that guide the Board of Trustees and the officers of the Association. Such functions as they undertake are wholly within the limits set by the House of Delegates.

For scientific purposes the American Medical Association is organized into scientific sections representing all of the medical specialties. Surgery is included in no less than five of these sections specifically and in most of the others partially. Thus the Sections on Surgery, General and Abdominal; on Obstetrics and Gynecology; on Ophthalmology; on Laryngology, Otology and Rhinology; on Urology and on Orthopedic Surgery deal specifically with surgical subjects and in some instances with medical subjects as well, whereas the Sections on Neurology and Psychiatry, Dermatology and Syphilology, Pathology and Physiology, Radiology and Anesthesiology are also concerned in many of their discussions with surgical subjects. In addition, the Scientific Exhibits of the American Medical Association and the General Scientific Assemblies give much attention to surgery. While these Sections are organized largely with a representation of specialists among their officers and their executive committees, their appeal is primarily toward extending to the general practitioner the advances that are made in the special branches of medicine.

Medicine in the United States is also organized for medical educational purposes. To meet the needs for educational controls, there are such groups as the Council on Medical Education and Hospitals of the American Medical Association, whose functions are wholly judicial and advisory, the Association of American Medical Colleges, the Federation of State Licensing Boards, and the individual colleges and licensing boards throughout the nation. Their functions are concerned primarily with educating young men to the point at which the degree of doctor of medicine may be conferred upon them and, thereafter, through the state licensing boards to determine that the candidate reaches a minimum standard of knowledge in the diagnosis and treatment of disease.

So great, however, has been the advancement of medical science in recent years that specialization has increasingly modified the form of medical practice. There has always been specialization in the practice of medicine. Even Herodotus wrote of eye specialists among the ancient Egyptians. In the time of the ancient Greeks there were some physicians in the school of Hippocrates recognized as especially proficient in certain arts and in certain practices in the medical field. In the Oath of Hippocrates the physician pledges himself not to cut for stone but to leave that to those who are skilled in that art. Variously it has been estimated that there are today in the practice of medicine in the United States approximately 65 per cent of general practitioners and 35 per cent of specialists. In 1932 the distribution of physicians in specialties indicated 48,000 out of a total of about 160,000 in practice. Of these, almost 13,000 were surgeons. Exact figures are not available because as yet, even with the existence of the certifying boards in the specialties, the demarcation from one specialty to

another is not quite exact. The tendency would seem to be more and more toward placing upon the certifying boards in the various specialties the responsibility for the necessary investigations and examinations to indicate that a young man is qualified to practice a specialty.

Few of the public understand the significance of certification. A surgeon who is qualified by the American Board of Surgery receives a document representing participation by seven surgical organizations. The document indicates that the moral and ethical standard of the surgeon is satisfactory to the Board, that he is a member of his national medical organization, that he has limited his activities to the practice of surgery, that he is a graduate of an approved medical school, that he has completed an internship of not less than one year in an approved hospital and that he has had a period of special training in surgery of not less than five years thereafter. That period of special training shall have placed emphasis on the basic medical sciences and shall have included adequate operative experience in which the candidate has assumed the whole responsibility.

No doubt the time will come when every practitioner of surgery in an approved hospital in the United States will hold the certificate granted by such an examining body. In the intervening period the public must select a surgeon on the basis of his repute among his fellow practitioners, his position on the staff of an approved hospital, and such knowledge as it may be able to secure as to the training which he has had for the practice of surgery.

There are in the United States at this time more organizations in the field of surgery than in almost any other medical specialty. The reason is obvious to the surgeon if not to anyone else. The development of surgery made it at first the child of a single parent—namely, anatomy. For a long time the logical route to success in surgery began with the teaching of anatomy and practice on cadavers. With the advancement of medical science through various epochs, surgery began to partake more and more of the knowledge of the other basic medical sciences. The evolution of the practice of surgery from the anatomical through the pathological and bacteriological periods to a surgery that is primarily physiological is one of the most interesting records in the history of medicine. A surgery that was primarily based on anatomy was primarily a craft rather than an art and a science. In the early years of the nineteenth century surgery consisted of a few operations performed on various portions of the body according to a strict routine laid down by some surgical master. The surgical eponyms proceed from Abbe's operation, which is a lateral intestinal anastomosis made with rings of catgut, through Bassini's technic for the radical cure of inguinal hernia, Billroth's first and second gastrectomies and the Fredet-Ramstedt operation for pyloric stenosis on to the Kraske operation for carcinoma of the rectum, the McBurney operation for appendicitis to Pirogoff's amputations, Wyeth's removal of the hip and Young's prostatectomy. No doubt it will ever be the ambition of a technical surgeon to attach his name to some technic so that the surgeon of the future will always recall him as he deftly incises the skin with an "S" shaped or horizontal incision, puts on a Mayo clamp or a Deaver scissor. I suppose that after the honor of remaining immortal through a surgical technic, eponymic permanence by a clamp, scissor or a drainage apparatus is quite secondary.

The period of anatomy was apparently followed by the influence of pathology.

In the history of surgery, pathology may well be called the judge that certifies to the child's legitimacy. It was a great day for surgery when medical organization was able to insist on examination by the pathologist of every tissue removed during a surgical operation. For the protection of the public no other step has been more significant, but the true advancement of surgery came with the development of anesthesia and asepsis. Now for the first time there entered into the picture of surgery an element to which far too few human beings gave adequate consideration. I refer, of course, to the element of time. Without anesthesia and asepsis the surgeon had to work far too rapidly for the safety of his patient. Today a delicate plastic operation on the hand, the removal of a tumor from the brain, an intricate operation within the abdomen or the chest may require hours and hours, during which anesthetics relieve the patient from pain, asepsis insures him against infection, blood plasma and blood transfusion control shock and hemorrhage, and the surgeon can take his time. With the need for haste removed from surgical procedure, it became possible for the surgeon to study carefully the steps taken during a surgical operation. With this change came accent on restoration of normal function rather than on removal of pathological tissue.

Modern surgery demands a basic knowledge far beyond anything that was required of the surgeon in a previous generation. I need only refer, for example, to the fundamental studies that are now being made on the treatment of the hypertrophied prostate gland. The technic of treatment used today as compared with the procedures of a previous generation reveals emphasis now on the use of glandular substances to control some of the aspects of prostatic hypertrophy, transurethral electric coagulation in many instances of pure hypertrophy, and reservation of surgical procedure to those cases in which proper biologic control cannot be had by the combined approach that has been mentioned. Much the same approach is had in the modern control of cancer, using chemical forces, physical forces, glandular and surgical forces. These scientific interpolations are made in this address merely to provide groundwork for the emphasis to come on education in surgery.

The education of a modern surgeon is pointed definitely toward certification by the American Board of Surgery. Once the embryonic surgeon emerges from the formative stage with the birth certificate that entitles him to live in the surgical atmosphere, he begins truly to partake of surgical pabulum. Now his mornings are spent in the operating room, his afternoons in visiting his patients and in conferring with those who visit him, his evenings (unless there are emergencies) poring over surgical periodicals and participating in surgical meetings. Thus he need not suffer any deficiency diseases from a lack of surgical nourishment. Surgical societies are innumerable and most of them have their own periodicals.

Among the educational activities available to the young surgeon emphasis must be placed first on the hospital conference in which the results of pathological study applied to specimens removed at operation or at postmortem become available. Participating in the hospital conference are the internists, the clinical pathologists and the roentgenologists who bear with the surgeon part of the burden for diagnosis—occasionally some of the burden for the treatment.

If the surgeon is resident in a large city or near a large city, he has his own local surgical society like the Chicago, New York and Washington Surgical Associations. In a few of our larger

states there are state surgical societies and in not a few of the state medical societies special sections are devoted to surgery. Then come the regional surgical societies with the Western, the Southern, the Pacific Coast, the Southeast, the New England, the North Pacific and similar groups. Still higher on a national scale are the American Surgical Association, the American College of Surgeons and the International College of Surgeons. But even beyond these groups come the clinical clubs, the interurban societies, and still smaller units of the self-selected and self-anointed who travel about and visit each other's clinic for scientific knowledge, social relationships and perhaps also a little political maneuvering. I have purposely avoided any attempt to list the innumerable special societies in orthopedic surgery, urology, thoracic surgery, gynecology, and whatnot. Some time ago I found that there were thirty-two medical meetings in a given month in the city of Chicago, and the doctor who wished to do so, could have spent each of his nights and most of his days sitting in some surgical conference.

The motivations for organization in medicine are many. They include not only the purposes to which reference has already been made but no doubt also the tendency toward exhibitionism that is invariably a part of the character of every virtuoso and the desire for recognition that is satisfied by the paraphernalia, regalia and alphabetical appendages inherent in membership in many of these societies. No doubt the time has come when every young man trembling on the threshhold of entrance into medical practice must scan with skepticism and scientific meticulousness the various appeals for his membership and his participation in medical organizations.

The needs for continuous education in surgery cannot be doubted. In a recent survey conducted under the auspices of the Council on Medical Education and Hospitals of the American Medical Association and its Committee on Postwar Medical Service a questionnaire was sent to all of the physicians in the armed forces. While the returns have not yet become available, the leaning towards surgery that is an inevitable accompaniment of the service of the doctor in war is already clearly apparent. There were 154 men out of 518 in the first sample who stated that they wanted extra education in surgery when they come home. A classification by age groups indicated that the chief demand was from men graduating since 1938 with a steady dwindling so that surgery interested only 7 who graduated in the years between 1920 and 1929, and only 2 who graduated before 1920. As the questionnaires come in, it is apparent that these early figures are sustained by the later reports.

Equally interesting, however, was the extent to which the majority of men wished refresher courses of six months' duration or less, and the tremendous number who wished merely what is called a "refresher." If all of these young men were to be given what they themselves request in the way of facilities for extra education, there would need to be a tremendous expansion in the facilities available for the study of surgery. No doubt something can be done to divert some of this energy and interest into some of the other fields of medical science where the needs are probably greater.

War is always a stimulus to interest in surgery and to surgical advancement. Next most important after war for this purpose is travel. One of the very earliest medical philosophers, Paracelsus, pointed out that a physician does not learn by sitting at home behind the stove

but by traveling about to see what others are doing. Among all of the branches of medical science, the surgeons are the greatest travelers. The needs of the surgeon in this regard were met in the period before this war by the International Society of Surgery, which, unfortunately, seems to have passed into a state of innocuous desuetude with the activities of the Germans toward war around 1936.

In the years since 1936 when the International College of surgeons was established, after a conference between its representatives and those of the International Society of Surgery, the International College of Surgeons has maintained such international relations as were possible between the surgeons of the North American continent and the Latin-American neighbors. Internationalism, as far as concerns relationships between the great surgeons of the United States and those of our enemy nations, is inconceivable even if it had been possible. I have heard far too many stories of some of the attitudes that prevailed in international meetings in the period between 1936 and 1940 to have much confidence in what international medical relationships can accomplish when economic and political factors drive our statesmen and our politicians into war. *In the years since 1936 the International Society of Surgery has simply failed to function.* What then of the future?

We approach a postwar world in medicine in which vast changes portend. We contemplate reorganization in the administration of medical service based on new technics for distribution of medical care and new methods for meeting medical costs. This tendency indicates a far greater utilization of what is pleasantly called "elective surgery" than has heretofore been possible. Such changes would signify great advancement, particularly for the correction of correctable defects of birth and growth, plastic surgery for rehabilitation and beautification, reconstructive surgery leading toward the establishment of normal physiologic function. Changes of which men speak include a wider utilization of the laboratory and of the roentgenologic services associated with good surgical procedure, leading toward more prompt and more certain diagnosis and thereby toward more scientific surgical care. One conceives of great hospitals serving as centers for surgical treatment, fed by diagnostic clinics and health centers somewhat far removed in space though not in time because new methods of transportation and communication have shortened the distance not only between continents but also between towns and villages and cities.

The expanding needs for scientific surgery created by new technics of distribution and payment for medical services mean necessary expansion in educational and graduate educational facilities. To those the medical profession is today turning its attention. Those young surgeons who receive the accolade of recognition by the American Board of Surgery, by membership in the American College of Surgeons and in the International College of Surgeons, and perhaps also some day in the revived and restored International Society of Surgery, must carry the burden not only of demonstrating in their own work the heights to which surgery may attain but also in defining the standards and principles by which surgery will become available to all of those who need surgical care.

Editorials

The 'Atlantic Charter' of the International College of Surgeons

Like the world's association of Nations under a canon of political and economic ideals, the International College of Surgeons pursues comparable objectives to that of the national aspirations for liberty and prosperity among the nations of the world.

1. The International College of Surgeons' surgical concept does not seek encroachment upon other surgical groups for control, domination or enforcement, but, indeed, while maintaining legitimate and competent autonomy, it strives for joint collaboration for the attainment of the highest scientific and ethical standards, and for the stimulus of the national genius inherent in each nationality, solely for the benefit of humanity.

2. It disclaims any intent to change the chosen practice among the schools, hospitals and surgeons of the various nationalities, but instead it aims to capitalize upon the experiences of the leaders in surgery for the benefit of all concerned.

3. It seeks a fundamental respect and recognition for the rights of surgeons and surgical institutions to their own self-government and initiative in the quest for knowledge, encouraging all freedom of action and originality in the coördination of united power to secure the ideals of maximum efficiency in other fields of practice and teaching.

4. The International College of Surgeons does and will endeavor, with due respect and faith in its aims and objectives, to secure equal enjoyment of opportunity and privilege for all its component Chapters, be they large or small, and where Chapters have not been organized, to invite the interest and representation of the College at the hands of the ablest and foremost surgeons throughout the world, which are needed for the coöperation and advancement of our organization.

5. It is desired that through this collaboration and fellowship of universal surgical talent, all forward and constructive activity will bring forth the uplifting of the Art and Science of Surgery, which cannot otherwise be attained.

The International College of Surgeons is conscious not only of its aims and objectives, but of the responsibilities entailed in its program of activities for the duration of the war. It has steadfastly overcome all obstacles in its path to render service in the war effort, as shown by the fact that one-fifth of the membership of the United States Chapter has joined the military medical services at home and abroad and we have no doubt, although we have not the necessary information, but that many of our foreign members are enlisted in the services of their armed forces.

The annual meetings of the United States Chapter and the biennial assemblies of our international organization of chapters have been devoted to further the contributions primarily to the war effort, as well as all possible activity in the scientific advancement of our profession along all lines of research and endeavor. We have had our difficulties and discouragements arising from the natural forces which, conflicting with the national mobilization of all war efforts, rendered the effectiveness of Assemblies of questionable result, but our Congress in Denver in July, 1942, our Assembly in New York in June, 1943, and the Meeting in Philadelphia in October, 1944, have all been such a signal success in furthering the dissemination of knowledge and preparing our organization for the vast responsibilities in the post-war activities of the medical profession that we have only reason for encouragement in holding our Annual Meetings and Biennial Assemblies.

In our meetings during the war, it has been the firm objective of the International College of Surgeons to devote the features of the Scientific Program and exhibits solely to the gain of knowledge drawn from the injuries and diseases of the battlefields, as well as the strain by the demands of the civil population upon the home medical services, with the natural shortness attending the concentration on all-out needs of the day, and this has been done with due consideration to the minimum possible interference with the man-power and supply required by the overwhelming call of military urgencies.

Desiderio Román.

Following the Path of Aesculapius*

SENSORY and rational education are of equal importance in training the student with the acknowledged necessity of scientific instruction.

Education of the *senses* is of particular value in medical diagnosis. The development of his capacity for sensual perception is an important aid in detecting and classifying many symptoms. Observing our students, it becomes evident that those who show talent for drawing, or better still, for painting, are more acutely aware of morphological structure, while those who have received a musical education are better fitted to differentiate delicate nuances of auscultatory phenomena and information gained from percussion. Students of painting, sculpture and music evidence greater aptitude in perception because of the special training and greater acuity of their sensory organs.

The most important obligation of the teacher is to guide the student's thought and help him coördinate his findings and reach sound conclusions. Logic and reason has constant application to all clinical work. The medical student must learn to think and rationalize.

The sons of Aesculapius owe humanity certain indispensable moral obligations. The example of the teacher is of fundamental importance. Constant attention should be paid to the moral conduct of the student. With this end in view, the "Oath of the Medical Student" should be obligatory to every young man on the path to perfection in his chosen calling. This oath parallels the "Hippocratic Oath." By constant repetition it induces the student to read carefully, to meditate solemnly and be inculcated with the profundity of its precepts. An outline of such an oath follows:

"In order that the satisfaction of a good moral life and the tranquillity of a just and sincere life may be mine in my studies and the exercises of my profes-

sion; in order that my social life may be blameless; in order that the highest approval of my parents and all men may be mine; I, a student of medicine, aiming to know and understand, with an unshakeable determination, hereby consecrate myself to the relief of suffering humanity, whom I shall serve with loyalty, benevolence and responsibility.

"I swear

To learn and to use my knowledge to good purpose, to study constantly, devoting all my strength and liberty thereto, in order to improve my knowledge of the medical sciences, respecting always the rights of my co-workers and their desires for advancement.

"I swear

Never to forget on entering the temple of medical practice that 'allis vivere,' to live for others, is engraved above the portal, and consequently I swear to treat each man with justice and charity wherever possible.

"I swear

To be severe with my own self and indulgent with others; to perfect myself in soul and body; to oppose disorder and danger with all my strength and principles.

"I swear

To love my career like a perfect thing, because loving it so is a revelation of my own destiny.

"I swear

To follow the advice of my elders, to receive with pleasure the counsel of others.

"I swear

To identify the respect inspired by my school with that of my home; that of my teachers with that of my parents; and that of my companions with that of my brothers.

"I swear

To cultivate prudence that accepts risks, but never intimidates; prudence that shows when life should be risked for the honor and well-being of the family, of the school or the glory of all humanity.

"I swear

That I shall follow the dictates of my conscience to the best of my ability; neither for vanity or fear of criticism will I endanger the life of those entrusted to my care.

"I swear

To strive for success in my studies, and should accolade and honor be my lot, I shall always walk in humility, without affectation, and I shall always remember that fame is fleeting and humility deserves the fruits of a higher life."

Miguel López Esnaurrízar
Mexico.

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*Editor's note. The precepts here expressed have been the guiding light of the profession for centuries, but their constant reiteration is wholesome practice. They are in line with the precepts illuminating the International College of Surgeons diploma, which reads: "Rappelez-vous que la vie et la santé de vos malades dépendent de votre savoir et de votre conscience. Ne laissez jamais les avantages matériels et personnels devenir les guides de votre conduite. Souvenez-vous que votre devoir est de rechercher sans cesse votre perfectionnement professionel. Aussi, n'oubliez jamais les égards que vous devez à vos confrères." To inculcate these precepts, so ably expounded by our Dr. Miguel López Esnaurrízar, into medical students is timely, indeed.

CHAPTER ACTIVITIES

PERUVIAN CHAPTER

On May 29, 1944, Prof. Dr. Eduardo Bello, Lima, Peru, celebrated his professional Golden Jubilee, completed on June 5. Impressive ceremonies were held at the Arzobispo Loayza Hospital and at the Faculty of Medicine.

A commemorative plaque was unveiled at an inspiring assembly held at the Hospital in the morning. It was attended by the Minister of Health and other personages prominent in medical, intellectual and social circles. Dr. Juvenal Denegri, in the name of his colleagues, spoke in praise of Dr. Bello, and Dr. Carlos Villarán, speaking for his students, extolled Dr. Bello as the highest example of idealism in medical endeavor.

At his residence in Miraflores, Dr. Bello received a committee from the Mayor of Lima, who transmitted the congratulations of the City Council to Dr. Bello.

At 6:30 P.M. a jubilee service was held at the Faculty of Medicine of "San Fernando" attended by various ministers of state, the Rector of the University of San Marcos de Lima, the Dean of the Faculty of Medicine, the presidents of the medical institutions of Lima and Callao, friends and students of Dr. Bello. After greeting Dr. Bello in the reception room, the gathering moved to the *Salón de Actos* of the Faculty of Medicine. There greetings were read and discourses given by Dr. Carlos Monge, Dean of the Faculty of Medicine, and Dr. Enrique Paz Soldán. Dr. Bello responded graciously.

Dr. Bello is a member of the National Academy of Medicine, of which he was president from 1926-28, of the Academy of Surgery and the Society of the History of Medicine of Peru; he is likewise a Fellow of the American College of Surgeons and the International College of Surgeons. In 1908 he became a professor of the Faculty of Medicine.

COSTA RICAN CHAPTER

Newly elected officers of the Costa Rican Chapter are:

President: Dr. Oscar Pacheco Ch.
Vice-President: Dr. Fernando Pinto E.
Treasurer: Dr. Alfonso Acosta G.
1st Sec'y: Dr. José Manuel Quirce Y.
2nd Sec'y: Dr. Oscar Martinez N.

Dr. Rafael Angel Calderón Guardia, F.I.C.S. (Hon.), ex-president of the Republic of Costa Rica, National Regent and Honorary President of the Costa Rican Chapter of the International College of Surgeons, has just arrived in Mexico City on a vacation trip. After several days he will go to New York, at the kind invitation of Dr. George T. Pack, in whose clinic of the Memorial Hospital he will carry on studies in cancer.

MEXICAN CHAPTER

Dr. Miguel López Esnaurrízar, F.I.C.S. (Hon.), National Regent and Treasurer of the Mexican Chapter of the International College of Surgeons, was dele-

gated to represent the National Faculty of Medicine of Mexico at the 51st Annual Assembly of American Medical Colleges, which met in Detroit. Dr. López Esnaurrízar spent a week with the International Secretary in Chicago, while in the United States.

TURKISH CHAPTER

Announcement was made at the Ninth Annual Assembly of the formation of the Turkish Chapter of the International College of Surgeons. The charter was officially presented to Mr. Orhan Eralp, Secretary to the Turkish Embassy in Washington.

Officers and members of the Turkish Chapter are as follows:

Trustees

Dr. Emin Erkul: Ex-Mayor of Istanbul and Ex-Professor of War Surgery at the Gülhane School of Medicine.

Dr. Fahri Arel: Dean of the School of Medicine, University of Istanbul.

Dr. Hazim Bumin: Surgeon of the Cerrahpasa Hospital and Assistant Professor at the School of Medicine, University of Istanbul.

Board of Trustees

President: Prof. Cemil Pasa.
Vice-President: Prof. Burhanettin Toker.
Secretary: Dr. Derois Manizade.

Members

Dr. Lutfu Kirdar, Governor and Mayor of Istanbul.
Prof. Dr. M. Kemal Oke.
Prof. Dr. Fuat Fehmi Caculi.
Dr. Nasit Erez, Gynecologist.
Dr. Aziz Fikret, Gynecologist.
Dr. Naci Bengisu, Oculist.
Dr. Irfan Basar, Oculist.
Dr. Hakki Ayri, Oculist.

Turkish Chapter, International College of Surgeons. Standing: sixth from left, Dr. Derois Manizade, Secretary; on right, Dr. Hazim Bumin, Founder and Regent. Seated, left to right: Dr. Avni Aksel, Member; Dr. Emin Erkul, Founder and Regent; Dr. Mrs. Suat Giz, Member; Dr. Burhanettin Toker, Vice-President; Dr. Aziz Fihret, Member; Dr. Fahri Arel, Founder and Regent; Dr. Naci Bengisu, Member (deceased).

Dr. Nejat Kulakçi, Oto-rhino-laryngologist.
Dr. Naci (deceased), Oto-rhino-laryngologist.
Dr. Haydar Ibrahim Aydar, Oto-rhino-laryngologist.
Dr. Hami Dilek, Surgeon Neurologist.
Dr. Behçet Sabih, Surgeon Urologist.
Dr. Ali Esref Gürel, Surgeon Urologist.
Dr. Feridun Sevket Evrensel, Surgeon.
Dr. Sinaski Hakki Erel, Surgeon
Dr. Avni Aksel, Surgeon.
Dr. Hilmi Evyapan, Surgeon.
Dr. Zizer, Surgeon.
Dr. Halt Ziya, Surgeon.
Dr. Ata Topaloglu, Surgeon.
Dr. Kemal Ozbay, Surgeon.
Dr. Murat Aydin, Surgeon
Dr. Suat Giz, Surgeon.
Dr. Ayet Giz, Surgeon.
Dr. Sait Tokdemir, Surgeon.

UNITED STATES CHAPTER

Dr. Oswald S. Lowsley, New York City, recently returned from a six weeks tour of Central America, where he delivered a series of lectures and conducted operative clinics in the medical colleges of Honduras, El Salvador, Guatemala and Mexico.

NEWLY ELECTED REGENTS AND ALTERNATES–DISTRICTS OF UNITED STATES

DISTRICT	STATES	REGENT	ALTERNATE
No. 1	*Connecticut* *Massachusetts* *Maine* *New Hampshire* *Rhode Island* *Vermont*	Dr. James A. Gettings, 209 Whalley Avenue, New Haven, Conn.	Dr. Geo. S. Foster, 925 Chestnut Street, Manchester, N. H.
No. 2	*New York*	Dr. Chester A. Peake, 1854 Bedford Avenue, Brooklyn, N. Y.	Dr. Henry M. Scheer, 522 West End Avenue, New York City
No. 3	*Delaware* *New Jersey* *Pennsylvania*	Dr. Watson B. Morris, 193 Morris Avenue, Springfield, N. J.	Dr. Elmer Hess, 8 East 12th Street, Erie, Pennsylvania
No. 4	*Dist. Columbia* *Maryland* *North Carolina* *Virginia* *West Virginia*	Dr. Thos. J. Hughes, Shenandoah Life Bldg., Roanoke, Virginia	Dr. John E. Cannaday, Charleston General Hospital, Charleston, W. Va.
No. 5	*Alabama* *Florida* *Georgia* *South Carolina*	Dr. Gilbert F. Douglas, 1111 South 20th Street Birmingham, Ala.	Dr. John M. Wilson, Van Antwerp Bldg., Mobile, Ala.
No. 6	*Kentucky* *Tennessee*	Dr. Herbert Acuff, 402 Medical Arts Bldg., Knoxville, Tenn.	
No. 7	*Michigan* *Ohio*	Dr. Clark D. Brooks, 113 Martin Place, Detroit 1, Michigan	Dr. Chas. E. Holzer, Holzer Hospital and Clinic, Gallipolis, Ohio

No. 8	*Indiana*	Dr. Thos. B. Noble, Jr. 23 E. Ohio Street, Indianapolis, Ind.	Dr. J. Rudolph Yung, Rose Dispensary Bldg., Terre Haute, Ind.
No. 9	*Illinois*	Dr. Alfred A. Strauss, 104 S. Michigan Avenue, Chicago, Ill.	Dr. Karl A. Meyer, 30 N. Michigan Avenue, Chicago, Ill.
No. 10	*Wisconsin*	Dr. Wm. J. Carson, 425 E. Wisconsin Avenue, Milwaukee, Wis.	Dr. Lemuel D. Smith, 2454 W. Kilbourn Avenue, Milwaukee, Wis.
No. 11	*Arkansas* *Louisiana* *Mississippi*	Dr. Theodore J. Dimitry, 4325 St. Charles Avenue, New Orleans, La.	Dr. Dewell Gann, Jr., P. O. Box No. 5, Benton, Ark.
No. 12	*Iowa* *Missouri*	Dr. Edward V. Mastin, 3720 Washington Blvd., St. Louis, Missouri	Dr. M. C. Hennessy, 306 Bennett Bldg., Council Bluffs, Iowa
No. 13	*Minnesota* *North Dakota* *South Dakota*	Dr. Olaf J. Hagen, Fargo Clinic, Fargo, N. D.	Dr. Owen King, 214½ S. Main Street, Aberdeen, S. D.
No. 14	*Nebraska*	Dr. Chas. L. Hustead, 116 West 16th Street, Falls City, Neb.	Dr. Cleland G. Moore, Stephens N. Bank Bldg., Fremont, Neb.
No. 15	*Kansas* *Oklahoma*	Dr. Andre B. Carney, 915 S. Cincinnati Street, Tulsa, Okla.	Dr. W. P. Callahan, 1108 Brown Bldg., Wichita, Kansas
No. 16	*Texas*	Dr. Henry H. Ogilvie, 205 Camden Street, San Antonio, Texas	Dr. Felix P. Miller, 1200 First N. Bk. Bldg., El Paso, Texas
No. 17	*Colorado* *New Mexico*	Dr. W. T. H. Baker, 702 N. Main Street, Pueblo, Colorado	Dr. Geo. B. Kent, Republic Bldg., Denver, Colorado
No. 18	*Utah* *Wyoming*	Dr. W. Andrew Bunten, Bunten Clinic, Cheyenne, Wyoming	Dr. C. L. Shields, 613 Judge Bldg., Salt Lake City, Utah
No. 19	*Idaho* *Montana*	Dr. J. C. MacGregor, 401 Medical Arts Bldg., Great Falls, Montana	Dr. J. H. Garberson, Garberson Clinic, Miles City, Montana
No. 20	*Oregon* *Washington*	Dr. Roger Anderson, Medical-Dental Bldg., Seattle, Washington	Dr. Brien T. King, Medical-Dental Bldg., Seattle, Washington
No. 21	*Arizona* *California* *Nevada*	Dr. Felix Cunha, 450 Sutter Street, San Francisco, Calif.	Dr. A. E. Gallant, 727 W. Seventh Street, Los Angeles, Calif.

ASSEMBLY ACTIVITIES

THE Ninth Annual Assembly of the United States Chapter of the International College of Surgeons was formally inaugurated by the Hon. Bernard Samuel, whose address of welcome follows.

ADDRESS OF WELCOME

HON. BERNARD SAMUEL
MAYOR OF PHILADELPHIA

I was very glad to accept the invitation to come here this morning and extend a hearty welcome to those attending the Ninth Annual Assembly of the United States Chapter of the International College of Surgeons.

It is particularly fitting that you should meet in Philadelphia at a time when we who are charged with the conduct of municipal affairs are planning for the day when our men and women, now in uniform, will return to their firesides.

No doubt, during your discussions, considerable attention will be given to the post-war period. I assure you that planning for the period of transition and for the peace to follow is a "must" on the agenda of city business.

This morning, however, I have been asked to talk to you about Philadelphia as a world medical center and our great hospital—the Philadelphia General Hospital.

I believe it to be the finest of its kind in the world, and I am sure in my estimate of its importance I am supported by many of the members of the medical profession here assembled.

I am advised the assembly about to open is the most important ever held by your organization because in no other war have the demands placed upon the medical personnel of our nation been as great as in the one in which our country is now engaged.

The oldest hospital on this continent is in Philadelphia. It was originally known as the Philadelphia Almshouse and now as the great Philadelphia General Hospital, the finest municipally conducted institution of its kind in the world.

It traces its history back to 1742 and I have only to recall a few of the names of members of the staff of the Almshouse and Hospital, as then organized, men whose names are part of medical and general history in the Revolutionary period, to substantiate this statement.

It is hardly necessary to recall to you the services of Dr. Benjamin Rush, both as a signer of the Declaration of Independence and member of the Medical Corps of the Patriot Army.

Then there was Dr. Thomas Bond, the Father of Clinical Medicine in the United States.

Another—Dr. William Shippen, famous both as the founder of the teaching of systematic medicine in this country and as a distinguished medical officer during the Revolution.

These distinguished physicians and patriots, outstanding in the history of their country, were members of the staff of the institution now known as the Philadelphia General Hospital.

There were others, however, who served their country and the Almshouse and Hospital with equal distinction. I refer to Dr. Benjamin Duffield and Dr. John Morgan.

A roll call of physicians, scientists, dentists and technicians, all proud of their residence in Philadelphia and who served in various wars in which our country has engaged in the past 168 years, would reveal the names of many who have made invaluable contributions not only to American History, but also to the professions with which they were identified.

Philadelphia's medical, scientific and dental history is rich indeed. Here are located five great undergraduate schools of medicine, an outstanding graduate school and forty excellent hospitals.

Here are located the finest dental colleges in the world and I know I am stating a fact when I declare that graduates of these unexcelled institutions of learning, before the war,

were practicing in every country on earth and in every state in the Union.

The profession represented here today can take pride in the great accomplishment of the tremendous reduction in the number of deaths resulting from wounds received on the fields of battle.

I am proud to be the chief executive of the city which has made such a fine contribution to the war effort from every conceivable direction. This is not the place or the time for me to review our activities at any great length, but I would like to say a few words about a phase of our undertakings which I am sure is of special interest to you.

More than 1000 of our physicians and dentists have entered the armed forces of our country and today are serving on the battle-fronts of the world, others are in our induction camps and wherever the army, navy or the marine corps is training men and women.

This service in the armed forces has caused a drain on local physicians engaged in civilian practice. Probably no other city has had to face the same problems we have encountered here because of our city's position as a teaching and hospital center. Scores of the leading physicians are giving voluntarily of their time and services to the war effort. Not a few are in research work and others are on advisory groups of various governmental agencies.

I would like, at this time, to make special reference to the United States Naval Hospital in Philadelphia. I took special pride in this institution from the moment decision was made to construct it in Philadelphia. My interest in the undertaking was increased when it was decided to construct it in South Philadelphia not far distant from where I was born and where I have lived since birth. It was peculiarly appropriate that the Naval Hospital should be constructed here because the first military hospital of the Army was organized in Philadelphia in 1861. It, too, was located south of Market Street.

During the war between the states, eminent Philadelphia physicians made valuable studies of gunshot wounds and nerve injuries at the Union Base Hospital here. These physicians included men known to many of you and to me. Two of them were Dr. S. Weir Mitchell and Dr. W. W. Keen.

A year and a half ago, I appointed a city planning commission to prepare a comprehensive program for city development during the post-war period. So I will talk to you for a few moments about suggestions which already have been made for improvements at the Philadelphia General Hospital and Philadelphia Hospital for Contagious Diseases.

Completion of the group of buildings at the Philadelphia General Hospital was halted during the depression, and when war came priority restrictions prevented resumption of our construction program.

Some of the old buildings now in use there were constructed in 1834. They appear old by contrast to the other buildings and it is imperative, in my opinion, that they should be replaced as soon as city finances permit.

The building program which has been submitted to the Planning Commission is as follows:

A new building to house the patients now in the Old Men's Nervous Department. This building to be located on the ground now occupied by the tennis court.

The addition of two stories to the two-story building now serving as the operating room.

New kitchens, dining rooms and a storehouse.

Industrial building—at the present time we have no centralized building for the necessary industries of the hospital such as plumbing, steam fitting, electrical work, painting, etc. We are, therefore, using the basements of one-half dozen buildings for our various industries. It is inconvenient and necessitates a tremendous lot of unnecessary work in hauling articles from one shop to another.

New out-patient building to be located on the site of the present Men's Nervous Building.

We are conducting our out-patient departments on the ground floors of half a dozen of our present buildings. The fact that these are so scattered and so poorly adapted for the purpose makes efficient work very difficult.

A new laundry.

The following recommendations for post-war planning have been made for the Philadelphia Hospital for Contagious Diseases:

The construction of an amphitheatre in order that we may properly teach the doctors and nurses coming to the hospital from all the medical and nursing schools of the city and state.

Construction of doctors' quarters. This would relieve congestion of the nursing home since many nurses could be housed in the present doctors' home.

Construction of sidewalks and curbing.

Renovation of all steam and water pipes throughout the institution.

In closing, I extend to all of you a most cordial welcome, and trust that those of you who are not Philadelphians will find time to visit our cultural institutions, including our universities and colleges, our museums, not forgetting the Franklin Institute and the Atwater Kent Museum.

I hope you have an opportunity to make pilgrimages to our great parks, including Fairmount Park, the finest municipal park in the world, as well as to our great port and to our industrial and mercantile establishments.

I have purposely refrained from discussing at length Philadelphia's historic background. It is well known to all.

I was born and have lived in Philadelphia for more than three score years and I never tire of visiting our Liberty's Shrine—Independence Hall.

The atmosphere within the old State House, the presence of the Liberty Bell and the relics of the stirring days during which our nation was born, ever thrill me and invariably I depart from the old building prouder than ever before that I am an American.

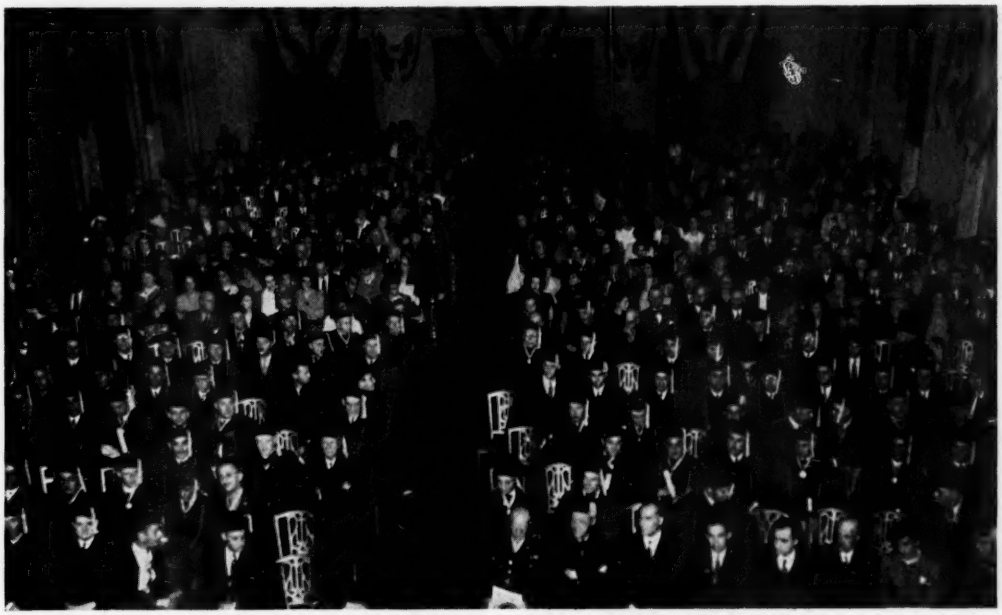
Gentlemen, welcome to the City of Brotherly Love!

May your meetings profit the cause of humanity.

Besides the stimulating scientific meetings, the splendid exhibits and the general business of the Assembly, outstanding features of the event were the Convocation, Service Night and the Banquet.

The **CONVOCATION** under the chairmanship of Dr. Ernest F. Purcell, was a most impressive function. The Crystal Ball Room was crowded. It provided a magnificent setting for the event. The walls were draped with the colors of the United States and the countries represented in the International College of Surgeons. Following the invocation by the Rev. Oscar W. Henderson, the presentation of colors added to the solemnity of the occasion. The banners of the nations, placed at the rear of the platform, created a riot of color and bespoke the international character of the organization and its increasing universality. There followed the oath of allegiance and memorial service in honor of deceased members.

Dr. Thomas A. Shallow, retiring president of the United States Chapter of the International College of Surgeons, addressing a section of the Convocation class.



Section of the Convocation Hall during the Convocation.

Dr. Thomas Shallow spoke of the joy with which he had fulfilled the duties of President of the United States Chapter and his pride in the progress of the organization.

Announcements were made and candidates from the United States Chapter were presented by Dr. Shallow to President Román, who conferred degrees upon the following candidates:

FELLOWS

Troy P. Bagwell, Knoxville, Tennessee
William Louis Bendel, Monroe, Louisiana
Theodore Bender, Paterson, New Jersey
Alvin Thomas Bonathan, Flint, Michigan
Samuel Wallace Bond, Twin Falls, Idaho
Harry Nathaniel Boyne, Omaha, Nebraska
Alfred Marion Buda, Brooklyn, New York
Alfonso Capecelatro, New Haven, Conn.
Willard Alonzo Chipman, Detroit, Michigan
Donald Victor Clark, Detroit, Michigan
Edward Steele Clayton, Knoxville, Tennessee
Leo Patrick Coakley, Omaha, Nebraska
William Gordon Coleman, Detroit, Michigan
Edward Lyon Compere, Chicago, Illinois
Edgar Willingham Davis, Washington, D. C.
Carl January DePrizio, Mansfield, Massachusetts
Otto Anderson Engh, Washington, D. C.
Frank Lewis Eskridge, Atlanta, Georgia
Samuel Arthur Flaherty, Detroit, Michigan
Anthony Joseph Font, Detroit, Michigan
Clarence Elmer Fronk, Honolulu, Hawaii
Louis Joseph Gariepy, Detroit, Michigan
Daniel Charles Goldfarb, Boston, Massachusetts
Harry Goldman, New York City
Irving Brice Goldman, New York City
John Jerome Goller, New Brighton, New York
Francisco Grammattei, Tarrytown, New York
Joseph Haas, New York City
George Halperin, Chicago, Illinois
Harold Isadore Harris, Hollywood, California
William S. Hartigan, Rochester, New York
Marlyn Webster Heilman, Tarentum, Pennsylvania
Dan Robert Herkimer, Lincoln Park, Michigan
Emil J. C. Hildenbrand, Washington, D. C.
Charles William Husband, Detroit, Michigan
Thomas Allen Kirk, Roanoke, Virginia
Roland Metzler Klemme, St. Louis, Missouri
Robert Gray Kroeze, Butte, Montana
Alvin Gerald Lambert, Ferndale, Michiagn
Paul Edmund Lawler, Chicago, Illinois
Richard H. Lawler, Chicago, Illinois
Edmund DeLoime Margrave, Royal Oak, Michigan
George Madison Maxwell, Roanoke, Virginia
Louis David McGuire, Omaha, Nebraska
Robert Leo McReynolds, Knoxville, Tennessee
Joseph Charles Menendez, New Orleans, Louisiana
Joseph Elias Milgram, Brooklyn, New York
Frank H. Murray, Philadelphia, Pennsylvania
*Leo Clement Mundy, Wilkes-Barre, Pennsylvania
James Wharton Nelson, Baltimore, Maryland
Rollo Kirk Packard, Chicago, Illinois
Abraham H. Persky, Philadelphia, Pennsylvania
Carlisle Rigdon Petty, Lynch, Kentucky
Manfred Ullman Prescott, Chicago, Illinois
Rupert B. Raney, Los Angeles, Califronia
William Walter Reich, Berkeley, California
Franklin Wilson Rice, Morristown, New Jersey
Carl Frederick Rusche, Hollywood, California
Peter H Scardino, Houston, Texas
Frederick Leonhardt Schwartz, San Diego, California
Maximilian Jean Seidner, Ogden, Utah
Peter Joseph Shammon, Brooklyn, New York
Clarence Lewars Shollenberger, Jr., Philadelphia, Pa.
Frederick Cleveland Smith, Philadelphia, Pennsylvania
Henry Anthony Springer, Cincinnati, Ohio
Moser Lyon Stadiem, New Orleans, Louisiana

Dr. Jaeger introducing Dr. Morris Fishbein, who delivered the Convocation address.

Dr. Roman, International President, introducing Mr. Orhan Eralp, representative of the Turkish Chapter of the International College.

Max Strauss, Newark, New Jersey
Frank Teller, Brooklyn, New York
Joseph J. Toland, Jr., Philadelphia, Pennsylvania
Isidor Solomon Tunick, New York City
Gideon M. Van Poole, Honolulu, Hawaii

Col. Walter F. von Zelinski, U. S. Army
James Edwin Walsworth, Monroe, Louisiana
Sydney Donald Weston, Brooklyn, New York

*Posthumous

ASSOCIATE FELLOW IN ANESTHESIOLOGY

Henry Swartley Ruth, Philadelphia, Pa.

MEMBERS

William Milton Adams, Memphis, Tenn.
Paul Biehl Arbogast, Vincennes, Ind.
Garnet Walter Ault, Washington, D. C.
Harvey Ellsworth Billig, Jr., Pasadena, Calif.
Henry George Bregenser, Pittsburgh, Pa.
Fern Ward Bucoa, Mulvane, Kans.
Lawrence James Butka, Alhambra, Calif.
Eugene H. Claverie, New Orleans, La.
Boston M. Day, San Francisco, Calif.
Earl Harold Dillinger, Las Vegas, N. M.
Christopher John DiCrocco, Staten Island, N. Y.
Walter Thomas Einen, Wichita, Kans.
Hyman S. Emil, Brooklyn, N. Y.
Carey Oliver Force, Athens, Tenn.
William Edwin Force, Athens, Tenn.
Morris Samuel Frank, Bayonne, N. J.
Orville Carlos Gass, Philadelphia, Pa.
Leon Gray, Martinsville, Ind.
Horace Alvin Hall, Redlands, Calif.
Glenn Harold Heilman, Tarentum, Pa.
Roger Gladstone Howlett, Golden, Colo.
Harold Frederick Hulbert, Dansville, N. Y.
Gerald Wilson Hunter, Fargo, N. D.
Joseph E. L. Imbleau, Union, N. J.
Kenneth Henry Judy, Bayonne, N. J.
David Kerschner, Brooklyn, N. Y.
Edward I. Kessler, Greystone Park, N. J.
Laddie Henry Kornafel, Indianapolis, Ind.
Clairmont Arthur Kressley, Sellersville, Pa.
Chester Huntly MacKay, Hollywood, Calif.
Daniel Randolph Mishell, Newark, N. J.
August Leopold Mollath, Santa Maria, Calif.
George Henry Mueller, Jersey City, N. J.
Helmuth Nathan, New York City
Arthur Eugene Newland, Bedford, Ind.
Yates Shuford Palmer, Valdese, N. C.
Roland I. Pritikin, Chicago, Ill.
Victor Hugo Raisman, Richmond Hill, N. Y.
Claude Albert Robb, Butler, Pa.
Don C. Robertson, Orlando, Fla.
Martin Collins Rogers, New York City
Edward Francis Sciorsci, Hoboken, N. J.
Eugene Edward Scott, St. Paul, Minn.
Samuel Shenkman, New York City
Benjamin Maurice Shure, Brooklyn, N. Y.
Irvin Stein, Philadelphia, Pa.
William Henry Varney, Washington, N. J.
William Vernon Wax, Catskill, N. Y.

ASSOCIATE MEMBERS

Richard Malvin Anderson, Vincennes, Ind.
Leonard Albert Barrow, Chicago, Ill.
Edward Charles Brandt, Crestline, Ohio
Frank Albert Farmer, Roanoke, Va.
Walter Orr Goehring, Pittsburgh, Pa.
James Mitsuo Goto, Topaz, Utah
Leo Clay Harris, Jr., Dublin, Ga.
Frank Joseph Hynes, New York City
Seymour William Meyer, Elkins, W. Va.
Arnold P. Mulkey, Millen, Ga.
Paul Hubert Pernworth, Venice, Ill.
Samuel Dale Porter, Grinnell, Iowa
Peter J. Serafin, New Haven, Conn.
David Byron Shulman, New York City
Irving Joshua Speigel, Chicago, Ill.
Ernst Sternfeld, Toledo, Ohio
Lloyd Leslie Wells, New York City

ASSOCIATE TO MEMBER

Ord William Burkholder, Toledo, Ohio
Joseph George Evans, Kansas City, Kans.
Graham Cyrenus Newbury, Cransford, N. J.

MEMBER TO FELLOW

John Henry Burge, Lake Village, Ark.
Myron Lester Curtner, Vincennes, Ind.
Beverly Arthur Finkle, Lincoln, Nebr.

ADVANCEMENTS

John Harry Hayes, Little Rock, Ark.
George Edward Kenny, Port Jervis, N. Y.
George Everie Lewis, Lincoln, Nebr.
Bruce Vischer MacFadyen, Philadelphia, Pa.
Russell Stuart Magee, Audubon, N. J.
C. Walter Mattingly, New Orleans, La.
Desiderio A. Roman, Philadelphia, Pa.

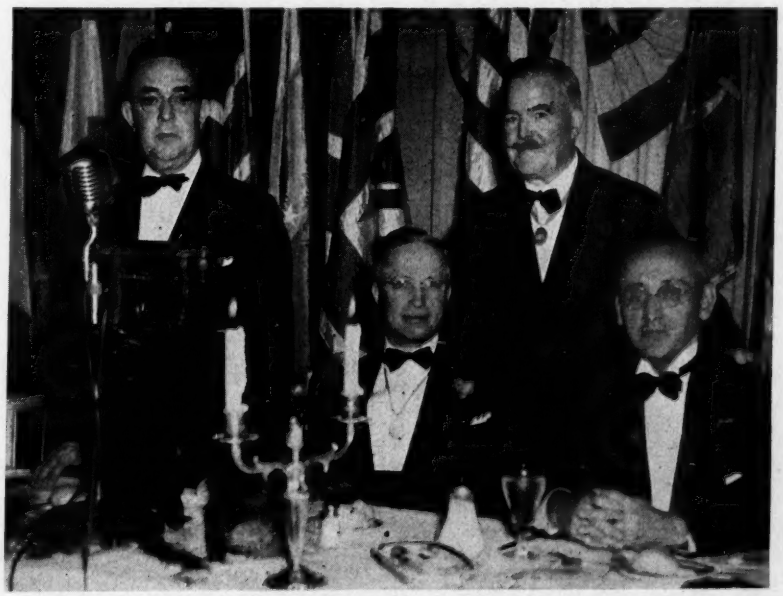
The successor to the retiring president of the United States Chapter, Dr. Rudolph Jaeger, was inducted into office by Dr. Shallow, who presented him with the gavel. Dr. Jaeger responded graciously.

Officers occupying places on the platform were introduced.

The International General Secretary read several communications and presented the new chapters, honorary fellows and guests. A telegram received from the China Chapter read:

"Felicitations annual convention International College of Surgeons from China Chapter. Dr. J. Heng Liu authorized represent Chapter and receive diplomas on behalf China Chapter."
Signed, James K. Shen, President.

The Turkish and Chinese Chapters were formally inaugurated, being represented by Mr. Orhan Eralp, secretary of the Turkish Embassy, and by Dr. J. Heng Liu respectively. The names of the members of the China Chapter were pub-



At the banquet table. Standing, left to right: Dr. Edward J. McCormick; Dr. John Edward Loftus. Seated, left to right: Dr. J. Rudolph Jaeger; Hon. Judge Vincent A. Carrol, Toastmaster.

lished in the March-April issue of the *Journal* and those of the Turkish Chapter appear elsewhere in this issue.

Col. Dean Llewelyn Winn was admitted to Honorary Fellowship in the United States Chapter, and the following were admitted to International membership, degrees being conferred by Dr. Desiderio Román.

CANADA

Dr. Richard Gaudet, Fellow
Dr. Louis M. Bertrand, Member
Dr. Richard Geddes Large, Member

U.S.S.R.

Prof. N. Priorov, Honorary Fellow
General Dr. Justin Dzenelidze, Honorary Fellow
General Prof. Dr. Semyon S. Hervolav, Honorary Fellow
General Dr. Vladimir S. Levitt, Honorary Fellow
Dr. Nikolai N. Blokhin, Fellow
Dr. Alexander P. Kotov, Fellow

NETHERLANDS

Dr. A. Van Tienhoven, Fellow

ISLAND OF CURAÇAO

Dr. F. R. Van de Stadt, Fellow

ISLAND OF ARUBA, NETHERLAND WEST INDIES

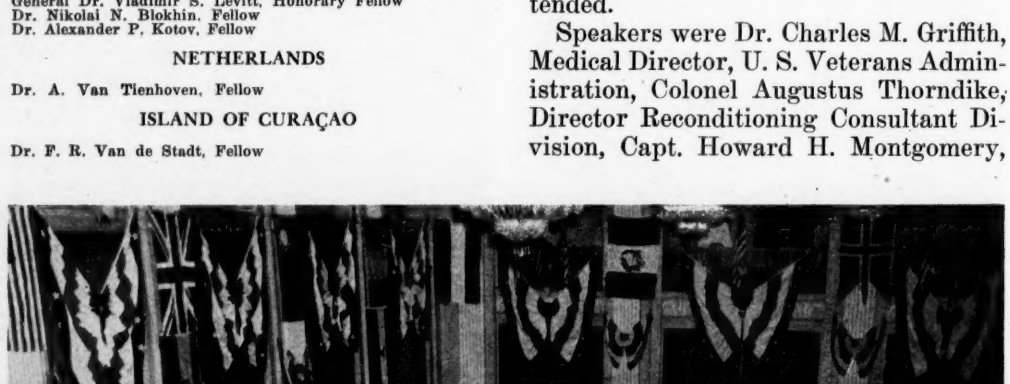
Dr. Willem Leendert Harmsen

Dr. Morris Fishbein, editor of the *Journal of the American Medical Association,* delivered the address of the evening on *"The Organization of American Medicine."* (See page 471.)

The Rev. Oscar W. Henderson gave the benediction.

A special feature of the Assembly was **SERVICE NIGHT,** at which Dr. Thomas A. Shallow presided. The gathering was held in the Crystal Ball room at 8 P.M. on Tuesday evening, October 3, and proved an inspiration to all who attended.

Speakers were Dr. Charles M. Griffith, Medical Director, U. S. Veterans Administration, Colonel Augustus Thorndike, Director Reconditioning Consultant Division, Capt. Howard H. Montgomery,



Section of the banquet hall during the banquet.

Chief of Division of Rehabilitation of the U. S. Navy, Capt. Richard A. Kern, U.S.N., and Major General George F. Lull.

The **ASSEMBLY DINNER** was held on Thursday evening, October 5, at 7:30 P.M. in the Crystal Ball Room, with Dr. Rudolph Jaeger presiding. The Honorable Vincent A. Carroll was toastmaster. The invocation was given by Rev. Hubert J. Cartwright. The subject of the address by Dr. Edward J. McCormick was Americanism. Rabbi William H. Fineshriber pronounced the benediction.

PROCEEDINGS OF THE OPENING SESSION OF THE HOUSE OF DELEGATES OF THE UNITED STATES CHAPTER, INTERNATIONAL COLLEGE OF SURGEONS, HELD AT THE BENJAMIN FRANKLIN HOTEL, PHILADELPHIA, PENNSYLVANIA, MONDAY, OCT. 2, 1944

THE opening session of the House of Delegates was called to order by the President, Dr. Thomas A. Shallow, at 2:10 P.M. At the request of the President, the Business Secretary proceeded with the Official Roll Call. The minutes of the last session of the House of Delegates of the United States Chapter, International College of Surgeons, held in New York City, June 14 and 15, 1943, were read by the Business Secretary and approved.

Dr. Thomas A. Shallow reported the progress of the organization. He stated: "We believe that within the past year much has been done to place this organization on a sound educational basis. Men have been carefully selected before being accepted in this organization. Many men have been rejected, possibly a few needlessly so, but the Council must depend upon information it has at hand, and use its best judgment for its action. I believe we are getting the cream of the young men of the surgical profession."

In presenting the Treasurer's report, Dr. Benjamin Golden remarked, "The College is in 'black ink,' and that the budget has been rigidly adhered to in a businesslike manner. From a financial viewpoint, the College is going along on a strictly business basis which is financially sound."

"Dr. Shallow," he added, "our Treasury is being built for education. The money will be placed where it is most needed."

The Secretary's report pointed to certain phases of last year's activities: (1) An unprecedented growth and interest in the College. (2) The *Journal of the International College of Surgeons* continues to be a medium for a large share of inquiries. With the passage of time more applications will originate from the splendid work of the membership and the work of the State Regents. (3) The organization of Districts throughout the States has been a forward step in planning for development that is bound to come in peaceful years. (4) Outline of plan for further progress.

The Editor of the *Journal* reported: (1) From a quarterly publication with a limited circulation, the *Journal* grew to be a bimonthly. (2) It is hoped that as time goes on it will become a monthly —the growth of the College promises that this goal will be achieved. He stated, "Outside of the expenditures absolutely necessary for the production of the *Journal,* there are no paid officers. The editor receives no salary and will accept none if offered. The hyperpieses which ultimately results in calcareous plaques in the aorta and are compensations to most editors, this editor fears these not. Nay, he welcomes them in the thought that he has been able to con-

tribute to the advancement of this fine endeavor."

The editor's report was accepted with enthusiasm and acclaim.

The International Secretary presented a message in which he brought greetings of the Board of Trustees of the International College of Surgeons. He said, "They are proud of the advancements of the United States Chapter, which is enshrined in their hearts, as the nucleus of a dynamic force in the activities of the College in a war-torn world. They (the International Board of Trustees) wish you to know, as you do already know from the reports presented in the *Journal of the International College of Surgeons,* that despite the war many chapters have been formed and have enrolled under the banner of the International College of Surgeons. At the Convocation on Wednesday some new chapters will be announced and some new names of surgical luminaries will be added to the roster of the International College of Surgeons.

"Our Dr. Jaeger has presented to you for approval the changes in the Constitution and By-Laws of the United States Chapter. These were submitted by the Chapter to the International Board of Trustees and were approved since the last U. S. Chapter Assembly held in New York City on June 16, 1943. They were printed in the *Journal,* as required by the Constitution and By-Laws, and have been approved by you today. These amendments have one objective only—the advancement of the interests of the individual, the Chapter, and the International College of Surgeons at large."

Dr. Golden moved, and the motion was duly seconded, that the report be accepted as read. Unanimously carried.

Dr. William Seaman Bainbridge, Treasurer of the International College of Surgeons, stated that "during the past year no difficulties have arisen that have not been met. The work of the Council of the U. S. Chapter has been particularly good, and there has been an interlocking of the various groups. We are solvent, with a good vision of the future, in spite of war conditions."

Due to the absence of Dr. Moses Behrend, Chairman of the Board of Examiners, Dr. Shallow commented on the splendid work done by Dr. Behrend.

Dr. Rudolph Jaeger, Chairman of the Constitution and By-Laws Committee, pointed out the changes and amendments to the Constitution and By-Laws over the past year, as recommended by the United States Chapter, and approved by the International Board of Trustees of the International College of Surgeons, and as printed in the *Journal of the International College of Surgeons,* asking that the House of Delegates approve these actions. Dr. Jaeger's report was accepted and approved by unanimous vote.

Dr. Shallow requested a motion ratifying all actions, including changes in the Constitution and By-Laws, taken by the Executive Council of the United States Chapter and as approved by the International Board of Trustees of the International College of Surgeons since the last meeting of the House of Delegates. The motion was unanimously carried.

Dr. Shallow called the roll of the deceased members over the past year. A silent tribute of respect was paid to their memory. The names of the deceased follow:

Dr. Leo Clement Mundy, F.I.C.S.....Wilkes-Barre, Pa.
Dr. Irvin Arthur Weichbrodt, F.I.C.S.....Seattle, Wash.
Dr. Walter Taylor Sheets, F.I.C.S.....Salt Lake City, Utah
Dr. Clifford A. Lutgin, F.I.C.S.....Auburn, Nebr.
Dr. William M. Dunn, F.I.C.S.....Atlanta, Ga.
Dr. Homer F. Wonders, F.I.C.S.....Philadelphia, Pa.
Dr. Ralph A. Bowdle, F.I.C.S.....East Ely, Nev.
Dr. Lloyd Thomas Sussex, F.I.C.S.....Havre, Mont.

In conformity with the Constitution and By-Laws Dr. Shallow appointed a Committee on Nominations to present a slate of officers to be elected at the Final

Session of the House of Delegates, Thursday, October 5, 1944.

The following Resolution was introduced by the International Secretary.

RESOLUTION

WHEREAS, Dr. Charles H. Arnold has been in the past one of the pioneers in advancing the interests of the International College of Surgeons, and

WHEREAS, he has acted as Secretary of the U. S. Chapter of the International College of Surgeons, and

WHEREAS, while as a Major in the Armed Forces and presently overseas, his love and interest for our endeavors are at their height,

BE IT RESOLVED, that in appreciation of his past and present endeavors he be extended a vote of thanks by the House of Delegates and that his name be retained as Secretary of the U. S. Chapter "in absentia" and that that office be restored to him upon his return to the United States and separation from the service of the Armed Forces.

The motion was unanimously carried.

A vote of thanks was extended to the various committees.

Dr. Golden referred to the Constitution in which it states that the Board of Trustees shall be elected to serve for two years, the same as other elected officers. It should be agreed that someone should remain on such committees who has watched the progress. He stated: "Therefore, I would submit to you that we elect, to start this year, members of the Board of Trustees, of which there are two, one for one year and one for two, so with each election there will be a carry-over acquainted with the work."

Dr. Shallow remarked that to make such amendment effective the International Board of Trustees would have to approve such change. The International Secretary stated that he would present the suggested change for approval by the International Board of Trustees. It was then moved and unanimously carried that such change be made.

Dr. Shallow spoke of the organization as a means of advancing younger men: "Organization of various surgical societies throughout this country sponsored by this Organization will be a new step, and a step toward progress for this Organization and the medical profession as a whole. The Guilds might well be incorporated into surgical societies, have so many meetings per year and encourage young men to present their work. This has always been my idea of surgical societies, that you see the same old men and hear the same old material, and that young men get no attention. This is a young man's organization."

Dr. Albert A. Berg stated: "I cannot add to the excellent remarks made by Dr. Shallow, but I can think of nothing that will advance surgery in the younger men more than their interest in such organizations as Dr. Shallow has outlined. The advancement of the younger men, in addition to being members of the parent body, will be a great step for our organization as a whole."

Pittsburgh, Pa., was mentioned as the next meeting place of the Annual Assembly. This matter was held in abeyance until the place of meeting of the International Assembly in 1945 is decided.

A committee, consisting of Drs. Watson B. Morris, James B. MacGregor and William D. Ryan, was appointed to study and report on Post-war Planning.

On the recommendation of Dr. Berg, the motion was made and passed that a copy of the report of the Council be sent to each member of the House of Delegates.

Dr. Shallow declared the meeting adjourned, calling attention to the Final Session of the House of Delegates to convene on Thursday, October 5, 1944, at 11:00 o'clock.

PROCEEDINGS OF THE FINAL SESSION OF THE HOUSE OF DELEGATES OF THE UNITED STATES CHAPTER, INTERNATIONAL COLLEGE OF SURGEONS, HELD AT THE BENJAMIN FRANKLIN HOTEL, PHILADELPHIA, PENNSYLVANIA, THURSDAY, OCTOBER 5, 1944

THE meeting was called to order by Dr. Rudolph Jaeger at 11:00 A.M. Following the roll call, Dr. Jaeger opened a discussion on the proper procedure of the District Credential Committee and Examining Board, pointing out the duty of each Regent to formulate plans to govern his District, and the advisibility of having all District functions conform to each other.

Dr. Simon Reisler presented an alternative plan. A copy of Dr. Reisler's report will be furnished each member of the House of Delegates by the Business Office. *Discussion.* It was unanimously agreed that the International College of Surgeons is a teaching and scientific organization, and that matters suggested by Dr. Reisler should be handled through the A.M.A. *and the A.M.A. alone.* Dr. Reisler stated that he had presented the plan to the A.M.A.

A report on the permanent home of the College in New York by the committee of which Dr. Albert A. Berg is Chairman was then presented and accepted with acclaim.

The following report, sent by the Chairman of the Board of Governors, Dr. Fred Douglass, was then read.

Doctor Shallow and *Members of the House of Delegates:*

I wish to report at this time that Regents have been named in each District, and from here our basic work will proceed.

I want to offer for your consideration, the Resolution this House of Delegates passed in Denver, namely, that each Fellow would help to train or act as Preceptor to returning Fellows, Members, Associate Members and other doctors after the war. This resolution having been passed, it is now time to organize the Fellows in each District and have assigned a returning physician to each Fellow, Member and Associate Member, to act as his assistant or volunteer worker on his service for a period of time.

The A.M.A. has sent questionnaires to all doctors in the Armed Forces and from this report we could have certain men from our districts assigned to us.

Dr. Paren Long, after interviewing many doctors in the service, writes in the last *A.M.A. Journal* that these men will need a kind association upon their return to help them back to their work. It is the duty of not only this College, but of all medical organizations, to do the job well, so that the men who have served their country so well will not say, and rightly so, we have not kept the faith.

Now, I want to thank you all for your kindness to me as your officer during the past years, as it has been a pleasure to work with you and for the principles of the College.

Respectfully,
Fred H. Douglass

The motion was unanimously carried that a letter of thanks be sent to Dr. Douglass.

Dr. Golden suggested the appointment of a committee to make a survey to determine how many men could be accommodated for actual training.

NOMINATION OF OFFICERS

The Nominating Committee presented the following list of candidates for office:

President:
Dr. Rudolph Jaeger, Philadelphia, Pa.

President-Elect:
Dr. William Bates, Philadelphia, Pa.

1st Vice-President:
Dr. Herbert Acuff, Knoxville, Tenn.

2nd Vice-President:
Dr. Roger Anderson, Seattle, Wash.

3rd Vice-President:
Dr. Henry H. Ogilvie, San Antonio, Texas

4th Vice-President:
Dr. Charles S. White, Washington, D. C.
5th Vice-President:
Dr. James C. MacGregor, Great Falls, Mont.
Executive Secretary:
Major Chas. H. Arnold, Lincoln, Neb.
Treasurer:
Dr. Benjamin I. Golden, Elkins, W. Va.
Chairman, Board of Trustees:
Dr. William Seaman Bainbridge, New York, N. Y.
Members, Board of Trustees:
Dr. Custis Lee Hall, Washington, D. C.
Dr. John Royal Moore, Philadelphia, Pa.
Chairman, Board of Governors:
Dr. Watson B. Morris, Springfield, N. J.
Chairman, Board of Examiners:
Dr. Moses Behrend, Philadelphia, Pa.

The presiding officer called for nominations from the floor. None being presented, the slate of officers presented by the Nominating Committee was then unanimously presented.

A committee was appointed to design a suitable key for the United States Chapter of the International College of Surgeons.

A letter of greetings and good will was forwarded to Dr. Fred H. Albee, whom illness prevented from being present, and another letter dispatched to Major Charles H. Arnold, carrying greetings from the House of Delegates, in recognition of his invaluable services to the College. A letter of regrets for his absence and illness, as well as flowers, was sent to Dr. Earl Craig.

The meeting was adjourned at 12:15 P.M.

J. Rudolph Jaeger, M.D., F.I.C.S.

J. RUDOLPH JAEGER, M.D., F.I.C.S.

THE newly installed President of the United States Chapter of the International College of Surgeons was born Oct. 29, 1895, in Clarksville, Mo. During World War I he served with the armed forces. In 1918 he received his A.B. degree from the University of Missouri, and in 1920 his M.D. degree from the University of Pennsylvania. His internship and chief residency were spent in Denver General Hospital, Denver, Colorado.

Since that time he has occupied the following posts: Part time Instructor in Anatomy, Pathology and Physiology at the University of Denver School of Dentistry (1922-1928); Assistant in General Surgery to Dr. Charles Jaeger (1922-28); extramural student, Neurological Surgery, service of Dr. Walter Dandy, Johns Hopkins Hospital, 1928-29; Assistant Professor of Surgery in charge of the Division of Neurosurgery, University of Colorado School of Medicine and Hospitals; Neurosurgeon to Presbyterian and Children's Hospitals of Denver; Consulting and Attending Neurosurgeon, Fitzsimons General Hospital, U. S. Army. At present he is head of the Dept. of Neurosurgery of Jefferson Medical College and Hospital, Philadelphia, Pa.

Dr. Jaeger is a member of the Central Neuropsychiatric Association and Licentiate of the American Board of Neurological Surgery. He is a Fellow of the International College of Surgeons.

He is much devoted to the advancement of younger men aspiring to specialize in general and neurosurgery.

William Bates, M.D., F.A.C.S., F.I.C.S.

HERBERT ACUFF, M.D., F.A.C.S., F.I.C.S.

DR. ACUFF was born Aug. 22, 1888, at Washburn, Tenn. He attended Carson and Newman College, Kentucky School of Pharmacy, and was graduated from the University of Louisville Medical School in 1911. From 1912-13 he was House Surgeon of the Knoxville General Hospital and in 1917 he pursued post-graduate studies at the University of Pennsylvania and Bellevue Hospitals, the Mayo Clinic and clinics in Vienna and Berlin. In addition to further study in the United States, in 1937 he did post-graduate work in Russia, Norway, Sweden, Greece and Berlin, with special studies in cancer at Stockholm and the Curie Institute in Paris.

Dr. Acuff's affiliations include: Major (MC), U. S. Reserve World War No. 1, in charge of mobile surgical unit in France; Chief of the Staff of St. Mary's Memorial Hospital; Beverly Hills Sanatorium; Attending Surgeon, Knoxville General Hospital; Attending Surgeon, Fort Sanders Hospital; Director of the Eastern Tennessee Tumor and Cancer Clinic, St. Mary's Memorial Hospital; Surgeon for the Southern Railway System; Surgeon for the United States Employee's Compensation Commission; Medical Director of the Office of Civilian Defense. He holds memberships in the Knox County Medical Society, Tennessee State Medical Association; American Medical Association; Southeastern Surgical Congress; Fellow of the American College of Surgeons and of the International College of Surgeons, of which he is First Vice-President of the United States Chapter.

WILLIAM BATES, B.S., M.D., F.A.C.S., F.I.C.S.

Graduate College Department, University of Pennsylvania, 1912; Medical Department, University of Pennsylvania, 1915. Two years internship in hospital of University of Pennsylvania, 1915-17. First Lieutenant, Medical Corps Reserve, 1916, active duty Fort Oglethorpe, 1917, Captain, Base Hospital No. 20 (University of Pennsylvania), 1917. Teaching enlisted personnel anesthesia, etc., 1918. Overseas one year, assistant to Dr. Eliason, 1919. Assigned to Fort McHenry in Baltimore, Md.

Professional appointments include: Howard Hospital, 1919-25; American Hospital for Disease of Stomach, 1919; Graduate Hospital, 1921 to present; Outpatient Dept., Babies' Hospital, 1919 to present. Professor of Surgery, Graduate Medical School, University of Pennsylvania, 1934; Surgeon to Presbyterian Hospital, 1933; Consulting General Surgeon, Wills Hospital; Consulting Surgeon to Philadelphia Home for Incurables.

Dr. Bates' other affiliations include: Past President, Medical Alumni, University of Pennsylvania and member of Board of Directors; Past President, Aesculapian Club of Philadelphia, member of Board of Directors; Past President, Philadelphia County Medical Society and member of Board of Censors; President, Medical Club of Philadelphia and member of Board of Directors; President, Medical Society of the State of Pennsylvania; Member of the House of Delegates of the American Medical Association; President of U. S. Base Hospital Twenty Association; Fellow of the American College of Surgeons; Fellow of the International College of Surgeons and President-elect of the United States Chapter.

Dr. Bates is author or co-author of over 60 articles.

Herbert Acuff, M.D., F.A.C.S., F.I.C.S.

Charles S. White, M.D., F.A.C.S., F.I.C.S.

ROGER ANDERSON, M.D., F.A.C.S., F.I.C.S.

DR. ANDERSON was born at St. Paul, Minn., in 1891. He was graduated with the A.B. degree from Hamlin University and the B.S. and M.D. degrees from Northwestern University Medical School, Chicago, Ill., in 1918. He was instructor in anatomy at Northwestern University. He served his internship at Cook County Hospital, Chicago, Ill., from 1918-20, followed by a three years' orthopedic assistantship, and Post Graduate studies in orthopedics here and on the European continent.

Dr. Anderson has been a staff member of Swedish Hospital, Providence Hospital and Seattle General Hospital; Orthopedic Surgeon to the Crippled Children's Services; on the Orthopedic and Fracture Service at King's County Hospital; and Orthopedic Consultant at the United States Marine Hospital, Seattle. He is a Fellow of the American College of Surgeons; Fellow of the International College of Surgeons and Vice-President of the United States Chapter; Member of the American Academy of Orthopedic Surgeons; President of the Seattle Surgical Society; Past-President of the Northwest Orthopedic Society and of the Western Orthopedic Association.

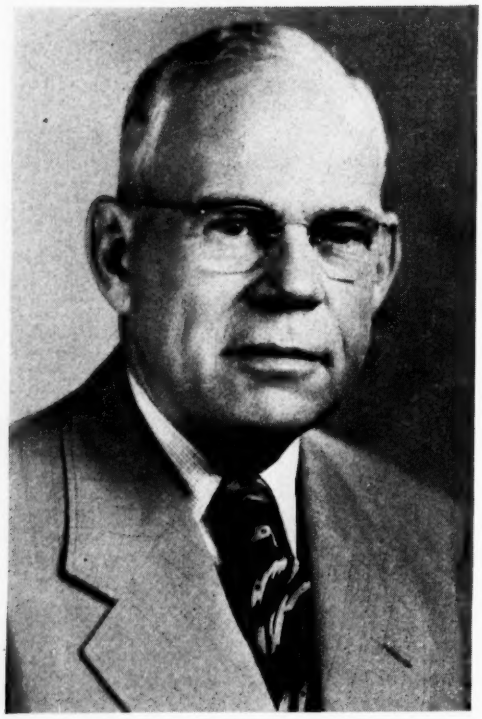
He is the author of numerous contributions to orthopedic literature.

CHARLES S. WHITE, M.D., F.A.C.S., F.I.C.S.

DR. WHITE was born in 1877. He was graduated from George Washington University Medical School in 1908. His present appointments include: President and Chief of Surgery of Doctors Hospital; Consulting Surgeon, Columbia, Garfield and Emergency Hospitals; Professor of Surgery and Executive Officer of George Washington University Medical School; Head of the Dept. of Surgery, Gallinger Municipal Hospital.

Dr. White is a Fellow of the American College of Surgeons and of the International College of Surgeons, being a Vice-President of its United States Chapter. Dr. White wields considerable influence in his territory in propagating the ideals of worthwhile surgical endeavor.

Roger Anderson, M.D., F.A.C.S., F.I.C.S.



Henry H. Ogilvie, M.D., F.A.C.S., F.I.C.S.

HENRY H. OGILVIE, M.D., F.A.C.S., F.I.C.S.

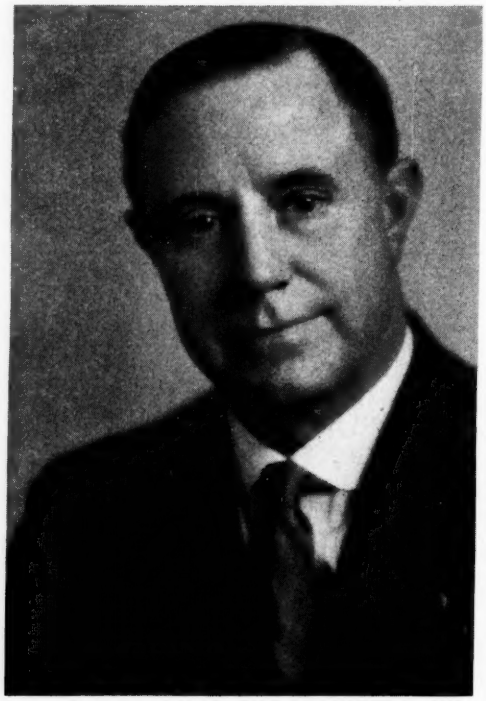
DR. OGILVIE was born on Feb. 7, 1885, at Melissa, Texas. He attended Baylor University and was graduated in Medicine from the University of Texas in 1910. He served his internship at Santa Rosa Hospital, San Antonio, Texas (1910-1911).

Dr. Ogilvie served as Captain (MC) at Base Hospital 79, AEF, 1918-19. At present he is on the staff of all San Antonio Hospitals and was co-founder of the Medical and Surgical Memorial Hospital.

His affiliations include county and state medical societies; the American Medical Association and the International College of Surgeons, of whose United States Chapter he is a Vice-President. In 1930 he won the case records award of the American College of Surgeons. He is well known for his activities toward surgical advancement and much interested in affairs pertaining to the welfare of the medical profession at large.

JAMES C. MacGREGOR, M.D., F.I.C.S.

DR. MacGREGOR was born in Davenport, Iowa, in 1882. He obtained his M.D. degree from the University of Iowa in 1906. Dr. MacGregor has been surgeon of the Anaconda Copper Mining Co., Great Falls, Mont., from 1917 to date, and on the executive staff of Columbus Hospital, Great Falls, from 1918 to date. He is a Fellow of the International College of Surgeons and a Vice-President of the United States Chapter. He has been very active in the Guild Activities of his territory and an untiring worker and enthusiast for the advancement of younger men in their desire to acquire surgical training.



James C. MacGregor, M.D., F.I.C.S.

Charles H. Arnold, M.D., F.I.C.S.

CHARLES H. ARNOLD, M.D., F.I.C.S.

THE Secretary of the United States Chapter of the International College of Surgeons, Dr. Arnold, was born at Dorchester, Neb., in 1888. He was a student at Cotner, Lincoln and Valparaiso Universities; his M.D. was obtained at the Chicago College of Medicine and Surgery in 1913. He pursued post-graduate studies at the University of Vienna in 1930 and 1933.

Dr. Arnold began the practice of Medicine in Lincoln in 1913. He has been Chief Surgeon and Lecturer on Surgery at the Dr. Benjamin F. Bailey Sanatorium; member of the surgical staff of St. Elizabeth's and Byran Memorial Hospital; at present he is Special Lecturer in Surgery, Creighton University School of Medicine.

His military service included assignment to the Medical Corps during the First World War and active duty as Major in the Medical Corps of the U. S. Army since 1943.

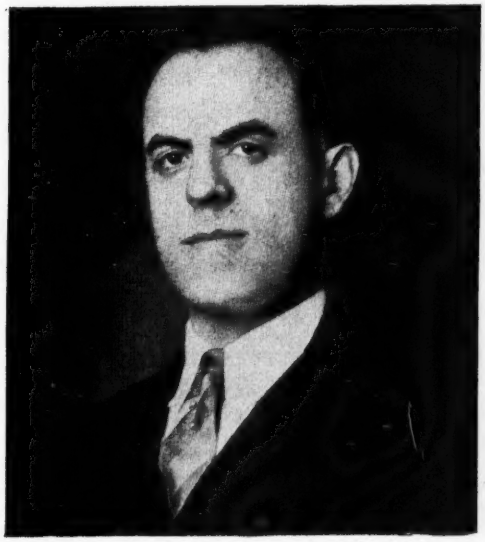
Dr. Arnold has been a member of the Advisory Board of the Nebraska State Labor Commission; delegate to the International Goiter Conference at Berne, Switzerland (1933); member of the Advisory Board to the Director of the City Health Department; Director of the Nebraska Council of the American Red Cross. He is a member of the American Medical Association, the Lancaster County Medical Association, the American Medical Association of Vienna; the National Military Surgeons Society, the American Association for the Study of Goiter, Member of the Executive Council and Executive Secretary of the United States Chapter of the International College of Surgeons of which he is a Fellow.

From the very inception of the College "Charley" Arnold, as he is lovingly referred to by his colleagues, displayed a deep devotion to its precepts. His host of friends bespeak a well-deserved popularity. His eagerness and sacrifices to enter the armed services, where he is now serving overseas, stamp him as a red-blooded American.

BENJAMIN I. GOLDEN, M.D., F.A.C.S., F.I.C.S.

BORN in 1892 Dr. Golden received his A.B. degree from Tufts College in 1916 and his M.D. from Temple University in 1921. From 1922-27 he acquired his surgical training. Dr. Golden was Professor of Biology at Davis-Elkins College (1925-34) and Lecturer from 1934-39; member (1930-33) and president (1931-33) of the West Virginia State Nurses Board; Associate Surgeon Davis Memorial Hospital (1927-29), Chief Surgeon Davis Memorial Hospital, 1930 to the present; Senior Surgeon, Reserve U. S. Public Health.

Dr. Golden's affiliations are: Fellow of the American Medical Association; Fellow of the American College of Surgeons; Fellow of the International College of Surgeons and Treasurer of the United States Chapter; Fellow of the International College of Anesthetists; member of the Radiological Society of North America. He is a diplomate of the American Board of Surgery.



Benjamin I. Golden, M.D., F.A.C.S., F.I.C.S.

Watson B. Morris, M.D., F.A.C.S., F.I.C.S.

WATSON B. MORRIS, M.D., F.A.C.S., F.I.C.S.

DR. MORRIS was born in Utica, N. Y., in 1878. He was graduated from N. Y. University and Bellevue Medical College. He was interne at Bellevue Hospital for two years and spent the following years studying in foreign clinics. During the First World War he was assigned to duty at Overlook Hospital and after the close of that conflict he was appointed Attending Surgeon to that Institution, a position he still holds.

In 1934 he served as President of the Union County Medical Society and since that time has been a member of its Board of Trustees. In 1937 he was elected 2nd Vice-President of the Medical Society of New Jersey, and in 1940 he was chosen its President. He also served on the Medical Practice Committee. At present he is President of the Board of Governors of the Union County Tuberculosis Hospital and Sanatorium and Secretary of the Surgical Staff of Overlook Hospital.

His medical affiliations are: Fellow of the American Medical Association; Fellow of the American College of Surgeons; member of the Alumni Association of Bellevue Hospital, New York; Fellow of the Academy of Medicine of Northern New Jersey; Regent for the 3rd District of the United States Chapter of the International College of Surgeons, Chairman of the Board of Governors of the United States Chapter, and Fellow of the College.

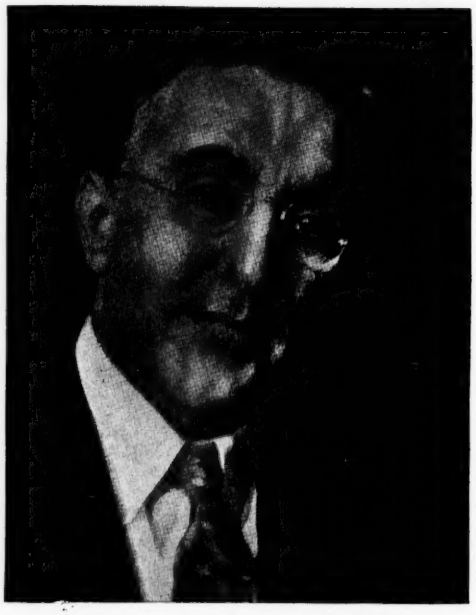
MOSES BEHREND, M.D., F.A.C.S., F.I.C.S.

DR. BEHREND was born June 6, 1877. He was graduated in medicine from the University of Pennsylvania in 1899. He is Attending Surgeon at the Jewish and Mt. Sinai Hospitals and Associate in Surgery at Jefferson Medical College. He is a Fellow of the American Medical Association, of the American College of Surgeons, and of the International College of Surgeons, of whose United States Chapter he is Chairman of the Board of Examiners, and of the College of Physicians of Philadelphia.

Dr. Behrend is a member of the Philadelphia County Medical Society, Pediatric Society and Pathological Society. He is ex-President of the Philadelphia County Medical Society and Medical Society of the State of Pennsylvania.

He is the author of: "Surgical Diseases of the Gallbladder, Liver, Pancreas and Their Treatment."

Dr. Behrend's geniality, ingratiating personality and devotion to his tasks has endeared him to both colleagues and acquaintances.



Moses Behrend, M.D., F.A.C.S., F.I.C.S.

WILLIAM SEAMAN BAINBRIDGE, M.D., F.I.C.S.

DR. BAINBRIDGE was born in 1870. He was graduated in medicine from the College of Physicians and surgeons of New York in 1893. He is consulting surgeon and surgical director to many metropolitan hospitals, including the United States Public Health Service and the New York and Third Naval Districts. He was captain, Medical Director, United States Naval Reserve, operating surgeon on the transport *U.S.S. George Washington* during the First World War and did special work at the front lines and in rehabilitation centers in France and England.

He was co-initiator of the International Congress of Military Medicine, Surgery and Sanitation. Official delegate from the Dept. of State of the United States to the Third International Assembly of the International College of Surgeons, Mexico, 1941.

Dr. Bainbridge is a member of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons; President, American Academy of Physical Medicine; Past-President, Association of Military Surgeons of the United States, Past Commander General, Military Order of Foreign Wars. Dr. Bainbridge is Honorary Fellow of the Royal Society of Medicine, England; Royal Academy of Medicine, Belgium; French Society of Gynecology, Society of Surgeons, Paris; Society of Surgeons, Poland; National Academy of Medicine, Venezuela; National Academy of Medicine, Mexico; Academy of Surgery, Peru; Academy of Sciences and Arts, Mexico; Association of Military Surgeons, Mexico. He has been decorated by a number of governments.

William Seaman Bainbridge, M.D., F.I.C.S.

Dr. Bainbridge is the author of many monographs on cancer, operative technic, abdominal gynecology and thyroid surgery.

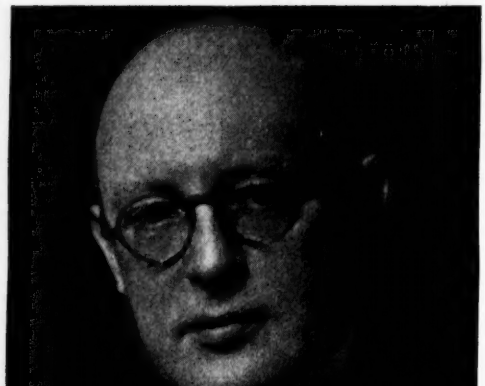
John Royal Moore, M.D., F.A.C.S., F.I.C.S.

JOHN ROYAL MOORE, M.D., F.A.C.S., F.I.C.S.

DR. MOORE was born Dec. 25, 1899, at Sagerton, Texas. His pre-medical work was completed at Willamette University and his M.D. was obtained from the University of California in 1925. He served his internship at the University of California Hospital and his orthopedic training was acquired at the Shriners' Hospital for Crippled Children, San Francisco (1925-27) and the Piedmont Clinic, Atlanta, Ga. (1927-28).

Dr. Moore is at present Chief Surgeon, Shriners' Hospital for Crippled Children, Philadelphia, Pa.; Chief of Orthopedic Service, Temple University Hospital; Professor of Orthopedic Surgery, Temple University Medical School; Orthopedic Surgeon, rotating service, Philadelphia General Hospital; Orthopedic Consultant, Medical Advisory Board, Area No. 1, Pa.

Other affiliations include: Member of Academy of Surgery, Philadelphia, Pa.; Medical Club; Orthopedic Club of Philadelphia; American Medical Association; American Orthopedic Association; Academy of Orthopedic Surgery; Fellow of the American College of Surgeons; Fellow of the International College of Surgeons and Member of the Board of Trustees of the United States Chapter.



Custis Lee Hall, M.D., F.A.C.S., F.I.C.S.

CUSTIS LEE HALL, M.D., F.A.C.S., F.I.C.S.

DR. HALL was born July 15, 1888. He was graduated in Medicine from George Washington University in 1912. He was resident physician at Garfield Hospital in 1913; Orthopedic House Officer, Massachusetts General Hospital, 1914-15; Assistant to Dr. E. G. Brackett, Boston, 1916.

His military services included: Orthopedic Surgeon, British Expeditionary Forces, 1917-18; Chief of Orthopedic Service, Base Hospital No. 88, AEF, 1919; Chief of Orthopedic Service, Base Hospital, Camp Sherman, Ohio, 1919.

Dr. Hall began private practice in Washington in 1920. He has been: Prof. of Orthopedic Surgery, George Washington (1920-33); Assistant Professor of Surgery, George Washington Medical School, 1933-37, Clinical Professor of Surgery, George Washington University Medical School, 1938. Orthopedic Surgeon to Garfield, Childrens, Columbia and Emergency Hospitals; Consultant in Orthopedic Surgery, U. S. Veterans Bureau, 1923-38; Chief Orthopedic Consultant, District Health Department.

His membership in organizations include: Fellow of the American College of Surgeons; Fellow and International Trustee of the International College of Surgeons and Member of the Board of Trustees of the United States Chapter, as well as Chairman of the Publication Committee of the *Journal of the International College of Surgeons;* Fellow of the American Academy of Orthopedic Surgeons; Licentiate of the American Board of Orthopedic Surgeons; Vice-President of the Pan American Medical Association and Past President of the Washington, D. C., Pan American Medical Society; Member Washington Academy of Medicine and Washington Academy of Surgery.

BOOK REVIEWS

(Continued from page 468)

sion of various diagnostic and therapeutic aids, such as excretory urography and cystography, radiation therapy, fluid administration, blood transfusion and anesthesia. A useful chapter is given over to the surgical approach to the kidney. Congenital anomalies of the kidney, which provide operative hazards, are carefully depicted. Instructions for each urologic procedure occupy the remainder of the book, including indications and contraindications, use or omission of drainage and each step of the usual operations on the kidneys, ureter, bladder, penis, testes and prostate are described.

The text is readable and concise, the illustrations by Helen Lorraine exceptionally fine. Each chapter concludes with an adequate bibliography, and the book is carefully indexed. It is highly recommended not only to the specialist in urology but to the general surgeon.

Demonstrations of Physical Signs in Clinical Surgery. Hamilton Bailey, F.R.C.S. (Eng.), Surgeon, Royal Northern Hospital, London. Ed. 9. 351 pp., 492 illus. John Wright & Co., Bristol, 1944.

Today, when emphasis in teaching has been so largely placed on various laboratory diagnoses, the surgeon relies all too frequently not on the acumen of his five senses, but on tests which experience has often proved to be fallible, valuable though they are as aids. The history and physical examination, as Hamilton Bailey states in his preface, must always remain the main channels by which a diagnosis is made. From this standpoint the book is an outstanding contribution to the literature.

Bailey stresses the fact that the basic principle of clinical surgery is comparison of an injured or diseased member or side with one that is normal, and lists such basic physical signs as location of pain, local temperature, pitting on pressure, fluctuation, translucency, enlargement of superficial veins, crepitus, pulse, vomit, hiccup and the appearance of the tongue, hands and face.

Individual chapters are devoted to clinical signs manifested in the head, abdomen, extremities, spine, bones and various joints of the body.

The illustrations, some in color, are excellent. The exposition is clear and to the point. A glossary of anatomical terms and thorough indexing make the volume especially valuable to the student. The book is highly recommended to student and clinician alike.

(Continued on page 503)

(Continued from page 502)

Clinics, Vol. II, No. 5, pp. 1077-1341. J. B. Lippincott Co., Philadelphia, Feb., 1944.

THIS issue of the *Clinics* contains a symposium on War Medicine presented at the October 1943 meeting of the Association of Military Surgeons, besides six original contributions on such diversified subjects as "Diagnostic Cardioroentgenography in Army Examinees," "A Simple Walking Cast," "Burns Incident to War-Measures for Their Prevention and Treatment," "Management of Purpura," "Effect of Shock on Intramuscular Pressures," and "Ochronosis." Chemotherapy (Pharmacology and Toxicology and Application and Results), Venereal Disease, Fatigue, Fractures, Plastic and Reconstruction Surgery, War Wounds and Burns and Gastro-Intestinal Disorders from the subjects of the discussions herein reported. In a few instances material presented was edited, in several others it was prepared in advance. For the most part the spontaneity of the panel discussions has been retained. In the discussions on chemotherapy, penicillin and its uses occupied an important place. Building up resistance to fatigue as well as training in relaxation has been stressed in the army. Gastro-intestinal disorders experienced by our men in the South Pacific were reviewed by the panel under the chairmanship of Dr. Andrew Ivy. This volume of informally presented material is of a particularly informative nature for medical men in the Armed Forces.

The Principles and Practice of Medicine. William Osler, edited by Henry A. Christian, Hersey Professor of the Theory and Practice of Physic, Emeritus, Harvard University. Ed. 15. 1498 pp. D. Appleton-Century, New York, 1944.

THE appearance of the 15th edition of Osler's Principles and Practice of Medicine, brought up to date by Henry Christian, is adequate testimony to the intrinsic worth of this ever-popular compendium of medical practices. Newly recognized syndromes and disease have been brought to the attention of the medical profession as the result of the war, notably those transmitted to the States from the tropics. Increase in venereal diseases and deficiency diseases due to food rationing and immigration of undernourished individuals is allotted adequate space in this edition. Functional diseases of the nervous system, infectious diseases, diseases due to parasites, insect and reptile bites, diseases due to physical agents, intoxications and metabolic disturbances are discussed at length. The merits of penicillin in pyogenic infections and syphilis and of the sulfa drugs—sulfanilamide, sulfathiazole, sulfadiazine, sulfapyridine, sulfaguanidine and sulfasuxidine—in infectious diseases are brought to the attention of the reader. No unnecessary details are given and the approach is strictly clinical. The unillustrated volume is solidly packed with facts.

Surgical Clinics of North America. August, 1943. Vol. 23, No. 4. 304 pp. Cloth, $16. Paper, $12. Issued serially, every other month (6 consecutive bimonthly issues). W. B. Saunders Co., Philadelphia, 1943.

THE Mayo Clinic Number, announced as a symposium on orthopedic surgery, treats also such diversified topics as Influence of Diet on Experimental Hepatitis, Experimental Studies on the Motor Mechanism of the Small Intestine, Extraperitoneal Resection for Cancer of Colon, Intraperitoneal Chemotherapy, Gramacidin and Penicillin, Sutures in Hernia Repair, and anesthesia. The "Technic of Thyroidectomy" by Dixon is particularly timely and of practical value. It gives food for thought to those who believe in removing all of the thyroid tissue (Hertzler et al) and to some who routinely expose the recurrent laryngeal nerve (Lahey et al). Fig. 304 on page 1088 is in distinct contradistinction to the teachings alluded to. The paper by Chas. W. Mayo and Richard A. Twyman on "Extraperitoneal Resection with Temporary Catheter Colostomy for Cancer of the Colon below the Splenic Flexure," also offers food for thought. Among the great many methods advocated for the treatment of malignancies of the large bowel, one might do well to study this procedure in evaluating these teachings with the methods which have followed a certain classicism in contemporary literature. On the whole, this number is excellent and contains much that is worth while.

MEMBERSHIP. — For information about membership in the International College of Surgeons and other matters pertaining thereto, address the International General Secretary, International College of Surgeons, 850 W. Irving Park Blvd., Chicago 13, Illinois.

THE JOURNAL OF THE INTERNATIONAL COLLEGE OF SURGEONS

Index, Volume VII, January-December, 1944

By Titles and Authors

INDEX TO ARTICLES

Abnormalities of the Female Genitalia (Weintrob) (Sept.-Oct.) 381
Activities of the Veterans Administration (Hines) (May-June) 171
Administrative Procedures in the Handling of the Discharge of Disabled Service Men (Sanders) (July-Aug.) 263
Adult Tissue Extracts in Promotion of Wound Healing (Mandl) (Jan.-Feb.) 34
Anesthesia during the Circumstances of War (Rovenstine) (July-Aug.) 301
Anesthesia in War Surgery (Graña) (May-June) 175
Appendiceal Coprolith Simulating Ureteral Calculus (Coleman) (Sept.-Oct.) 397
Apreciaciones sobre la Pelvis de la Mujer Oaxaquena (Landero) (Mar.-Apr.) 144
Argumosa's Two Methods of Blepharoplasty (Márquez) (Jan.-Feb.) 63
Army Rehabilitation (Gorman) (Sept.-Oct.) 370

Blast (Bailey) (July-Aug.) 257
Blast Injuries (Hogan) (May-June) 193
Blepharoplasty, Argumosa's Two Methods of (Márquez) (Jan.-Feb.) 63

BOOK REVIEWS

Arthoplastia del Codo. Oscar Busto (May-June) 256
Cataract and Anomalies of the Lens. John G. Bellows (Sept.-Oct.) XI
Chemotherapy of Gonococcic Infections. Russell D. Herrold (Jan.-Feb.) 81
China's Health Problems. Szeming Sze (Sept.-Oct.) 422
Clinical Diagnosis by Laboratory Examination. John A. Kolmer (Mar.-Apr.) 169
Demonstrations of Physical Signs in Clinical Surgery. Hamilton Bailey (Nov.-Dec.) 502
Dental Treatment of Maxillo-Facial Injuries. W. Kelsey Fry (Nov.-Dec.) 468
Dental Vocabulary. Joseph S. F. Marie (Jan.-Feb.) 83
Emergency Surgery. Hamilton Bailey (July-Aug.) 334
Enjoyment of Art in America. Regina Schoolman (Sept.-Oct.) XI
Essentials of Gynecology. Willard R. Cooke (Jan.-Feb.) 83
History of Surgery. Richard A. Leonardo (Jan.-Feb.) 82
Intracranial Arterial Aneurysms. Walter E. Dandy (July-Aug.) 335
Kinetic Bandaging. Seymour W. Meyer (Mar.-Apr.) 170
Man in Structure and Function. Fritz Kahn (Mar.-Apr.) 168
Medical Clinics of North America. May, 1943. Vol. 27, No. 3 (Jan.-Feb.) 82
Minor Surgery. Frederick Christopher (May-June) 256
Pathology and Therapy of Rheumatic Fever. Leopold Lichtwitz (May-June) 256
Pioneers of Pediatrics. Abraham Levinson (Jan.-Feb.) 82
Principles and Practices of Inhalational Therapy. Alvan L. Barach (Sept.-Oct.) 422
Reconstructive Surgery of the Eyelids. Wendell L. Hughes (Nov.-Dec.) 468
Report by the Minister of Health and the Secretary of State for Scotland on a National health Service (July-Aug.) 334
Short Practice of Surgery. Hamilton Bailey and R. J. McNeill Love (Jan.-Feb.) 83
Story of Medicine. Victor Robinson (Jan.-Feb.) 82
Sulfonamide Therapy in Medical Practice. Frederick G. Smith (May-June) 256
Sulfanilamidoterapia Local. Juan Nasio (Mar.-Apr.) 169
Surgery of Modern Warfare. Parts I and II. Hamilton Bailey (Mar.-Apr.) 168
Parts III and IV (May-June) 255
Part V (July-Aug.) 335
Part VI (Sept.-Oct.) 421
Surgery of Pancreatic Tumors. Alexander Brunschwig (Sept.-Oct.) 422
Surgical Clinics of North America. April, 1943. Vol. 43, No. 2 (Mar.-Apr.) 169
Textbook of General Surgery. Warren H. Cole and Robert Elman (May-June) 255
Trail to Light: A Biography of Joseph Goldberger. Robert P. Parsons (Jan.-Feb.) 81
Traumatic Injuries of Facial Bones. An Atlas of Treatment. John B. Erich (Mar.-Apr.) .. 170
Treatment of Peptic Ulcer. George B. Heuer (Sept.-Oct.) 421
Urological Surgery. Austin I. Dodson (Nov.-Dec.) 468
Varicose Veins, Hemorrhoids and Other Conditions; Their Treatment by Injection. R. Rowden Foote (Nov.-Dec.) 468
Vascular Responses in the Extremities of Man in Health and Disease. David I. Abramson (May-June) 255
War Endocrinology. James H. Hutton (Sept.-Oct.) 422
War Wounds and Injuries. Rodney Maingot, E. G. Slesinger and Ernest Fletcher (Mar.-Apr.) 168
White Blood Cells Differential Tables. T. R. Waugh (May-June) 255

Cáncer del Recto, Tratamiento Electroquirúrgico del (Roffo) (May-June) 202
Cerebral Injuries (Garibay) (Jan.-Feb.) 24
Cerebro-Spinal Fluid Fistula, Transplantation of Omentum in Closure of (Mandl) (May-June) . 219
Cesarea Extraperitoneal en Distocias Provocadas por las Partes Blandas de la Pelvis y en Mujeres Infectadas. Part I. (Gastélum) (Sept.-Oct.) 355
Cholecystitis, Acute (Mainzer) (May-June) 241
Chinese Army Surgeon, Difficulties of (Liu) (Jan.-Feb.) 72
Cirugía Arquitectónica de los Huesos (Tirado) (Jan.-Feb.) 15
Classification of War Wounds (Hughes) (July-Aug.) 275
Conservation of Man Power for War (Corbusier) (Mar.-Apr.) 108
Crush Syndrome (Bailey) (Sept.-Oct.) 343

Dacriocistorrinostomía, Técnica Simplificada para la (Estrada) (Mar.-Apr.) 147
Desgarro Total de la Cara Posterior e Inferior de la Vejiga Fistula Rectovaginal (Pavlovsky) (July-Aug.) 308
Difficulties of a Chinese Army Surgeon (Liu) (Jan.-Feb.) 72
Dr. William Henry Welch (Kagan) (Mar.-Apr.) . 133

Editorials
"Age Limit" Again (July-Aug.) 315
Antireticular Cytotoxic Serum (Mar.-Apr.) 161
"Atlantic Charter" of the International College of Surgeons (Nov.-Dec.) 477
Changing Trends in Suture Material (Sept.-Oct.) 441
Do Urinary Antiseptics Cure Urologic Conditions? (Jan.-Feb.) 69
Following the Path of Aesculapius (Nov.-Dec.) 478
Making of a Surgeon (May-June) 248
Postoperative Prognosis in Tumors of the Adrenal Cortex (Jan.-Feb.) 69
Post-War International Coöperation (Mar.-Apr.) 160
Prevention and Treatment of Experimental Renal Obstruction from Sulfadiazine (Sept.-Oct.) 412
Ribbon Cut in Surgery (May-June) 249
Russian Army Medical Personnel on the Battlefield (Sept.-Oct.) 414
Sulfacetimide in Urinary Tract Infection (July-Aug.) 316
Taking Stock of Ourselves (Sept.-Oct.) 409
Elbow Joint, Nearthrosis Following Comminuted Fracture of (Mandl) (Sept.-Oct.) 362
Embolism, Treatment of Surgical Shock and (Allen) (Nov.-Dec.) 423

Female Genitalia, Abnormalities of (Weintrob) (Sept.-Oct.) 381
Fibroma, Sarcomatous Degeneration of (Tractenberg) (Mar.-Apr.) 134
Field Surgery, Observations on (Lebedenko) (Mar.-Apr.) 92
Foreign Bodies, Localization of (Brailsford) (Mar.-Apr.) 85
Fractures of the Long Bones, A Self-Aligning Method of Treating (Anderson) (Jan.-Feb.) .. 1
Free Muscle Transplantation in the Restoration of Lips and Cheeks (Prudente (July-Aug.) ... 312
Functional Liver Tests, Present Status of (Wilensky) (Jan.-Feb.) 50

Gas Casualties (Waitt) (July-Aug.) 296
Gastro-Intestinal Tract, Surgical Significance of the Anatomical Layers of the (Burket) (Nov.-Dec.) 462

Hypernephroid Tumor of the Right Kidney, with a Metastatic Lesion in the Right Scapula (Nagel) (May-June) 235

Injuries, Cerebral (Garibay) (Jan.-Feb.) 24
Intra-Abdominal Calcareous Tumors (St. Loup B.) (Nov.-Dec.) 452

Leukemia, Paint-Splash Cervix in (Weintrob) (Mar.-Apr.) 98
Lips and Cheeks, Free Muscle Transplantation in the Restoration of (Prudente) (July-Aug.) ... 312
Localization of Foreign Bodies (Brailsford) (Mar.-Apr.) 85

Mediastinal Wounds Caused by Explosives (Erkul) (May-June) 200
Modificación a la Técnica de Neumoventriculografía (Vázquez) (Jan.-Feb.) 28
Muscle Reinervation (Billig) (Nov.-Dec.) 457
Muscles, Trunk and Leg, Restoration of Walking Capacity after Paralysis of (Spira) (Jan.-Feb.) 59

Nature of Medical Organization (Fishbein) (Nov.-Dec.) 471
Naval Medical Research in Wartime (Mann) (Sept.-Oct.) 349
Nearthrosis Following Comminuted Fracture of the Elbow Joint (Mandl) (Sept.-Oct.) 362
Neumoventriculografía, Modificación a la Técnica de (Vázquez) (Jan.-Feb.) 28
Nueva Técnica de Toracoplastia por Vía Axilar (Soto) (Sept.-Oct.) 377

Observations on Field Surgery (Lebedenko) (Mar.-Apr.) 92
Omentum, Transplantation of in Closure of Cerebro-Spinal Fluid Fistula (Mandl) (May-June) 219

Paint-Splash Cervix in Leukemia (Weintrob) Mar.-Apr.) 98
Paralysis of Trunk and Leg Muscles, Restoration of Walking Capacity after (Spira) (Jan.-Feb.) 59
Physical Medicine and the Rehabilitation Problem (McFee) (Sept.-Oct.) 402
Praeputium Skin in "Structive" Surgery, Use of (Esser) (Nov.-Dec.) 469
Present Status of Functional Liver Tests (Wilensky) (Jan.-Feb.) 50
Present Treatment of Wounds and Burns (Hayden) (May-June) 179
Prostatic Hypertrophy, Testicular Hormones and Their Influence on (Kook) (Mar.-Apr.) 129
Pseudotumors in the Synovial Membrane of the Knee Joint, on the Occurrence of (Milwidsky) (May-June) 227

Raquí-Analgesia Generalizada, La (Fierro) (May-June) 221
Rehabilitation, or the Salvaging of Man Power (Albee) (Sept.-Oct.) 337
Rehabilitation Problem, Physical Medicine and (McFee) (Sept.-Oct.) 402
Respiratory System, Surgical Treatment of Tuberculous and Malignant Diseases of the (Griffith) (Jan.-Feb.) 9
Restoration of Walking Capacity after Paralysis of Trunk and Leg Muscles (Spira) (Jan.-Feb.) 59

Sarcomatous Degeneration of Fibroma (Tractenberg) (Mar.-Apr.) 134
Self-Aligning Method of Treating Fractures of the Long Bones (Anderson) (Jan.-Feb.) 1
Shock (Craig) (Mar.-Apr.) 103
Shock, Surgical, and Embolism, Treatment of (Allen) (Nov.-Dec.) 423
Skull and Brain, War Wounds of (Colmers) (Mar.-Apr.) 116
Surgeons and Events (Thorek)
Dupuytren, Guillaume (Sept.-Oct.) 353
Guillotin, Joseph-Ignace (July-Aug.) 285
Larrey, Domonique-Jean, Baron (May-June) .. 191
Yudin, Sergei S. (Nov.-Dec.) 446
Surgical Significance of the Anatomical Layers of the Gastro-Intestinal Tract (Burket) (Nov.-Dec.) 462
Surgical Treatment of Tuberculous and Malignant Diseases of the Respiratory System (Griffith) (Jan.-Feb.) 9
Suturing Infected Wounds of the Face (Guilbert) (Jan.-Feb.) 44

Técnica Simplificada para la Dacriocistorrinostomía (Estrada) (Mar.-Apr.) 147
Testicular Hormones and Their Influence on Prostatic Hypertrophy (Kook) (Mar.-Apr.) .. 129
Thoracic Injuries in Combat Zone (Shaar) (Sept.-Oct.) 365
Toracoplastia por Vía Axilar, Nueva Técnica de (Soto) (Sept.-Oct.) 377
Transplantation of Omentum in Closure of Cerebro-Spinal Fluid Fistula (Mandl) (May-June) 219
Tratamiento Electroquirúrgico del Cáncer del Recto (Roffo) (May-June) 202
Treatment of Surgical Shock and Embolism (Allen) (Nov.-Dec.) 423
Tuberculous and Malignant Diseases of the Respiratory System, Surgical Treatment of (Griffith) (Jan.-Feb.) 9
Tumors, Intra-Abdominal Calcareous (St. Loup B.) (Nov.-Dec.) 452

Ulcerative Leiomyoma of the Stomach (Behrend)) (Nov.-Dec.) 436
Ulcus Callosum Recti (Hochenegg) (Mandl) (Nov.-Dec.) 447
Use of Plasma, Whole Blood and Human Serum Albumin by the Armed Forces (Kendrick) (July-Aug.) 289

Veterans Administration, Activities of (Hines) (May-June) 171

War Surgery, Anesthesia in (Graña) (May-June) 175
War Wounds, Classification of (Hughes) (July-Aug.) 275
War Wounds of the Skull and Brain (Colmers) (Mar.-Apr.) 116
Wound Healing, Adult Tissue Extracts in Promotion of (Mandl) (Jan.-Feb.) 34
Wounds and Burns, Present Treatment of (Hayden) (May-June) 179
Wounds of the Face, Suturing Infected (Guilbert) (Jan.-Feb.) 44

INDEX TO AUTHORS

Albee, Fred H.: Rehabilitation, or the Salvaging of Manpower (Sept.-Oct.) 337
Allen, Frederick M.: Treatment of Surgical Shock and Embolism (Nov.-Dec.) 423
Anderson, Roger: A Self-Aligning Method of Treating Fractures of the Long Bones (Jan.-Feb.) 1

Bailey, Hamilton: Blast (July-Aug.) 257
— Crush Syndrome (Sept.-Oct.) 343
Behrend, Moses: Ulcerative Leiomyoma of the Stomach (Nov.-Dec.) 436
Billig, Lt. Comdr. Harvey E., Jr.: Muscle Reinervation (Nov.-Dec.) 457
Brailsford, James F.: Localization of Foreign Bodies (Mar.-Apr.) 85
Burket, Walter C.: Surgical Significance of the Anatomical Layers of the Gastro-Intestinal Tract (Nov.-Dec.) 462

Coleman, W. G.: Appendiceal Corprolith Simulating Ureteral Calculus (Sept.-Oct.) 397
Colmers, Franz A.: War Wounds of the Skull and Brain (Mar.-Apr.) 116
Corbusier, Harold D.: Conservation of Man Power for War (Mar.-Apr.) 108
Craig, W. M.: Shock (Mar.-Apr.) 103

Erkul, Emin: Mediastinal Wounds Caused by Explosives (May-June) 200
Esser, J. F. S.: Use of Praeputium skin in "Structive" Surgery (Nov.-Dec.) 469
Estrada, A. Torres: Técnica Simplificada para la Dacriocistorrinostomía (Mar.-Apr.) 147

Fierro, Darío Fernández: La Raquí-Analgesia Generalizada (May-June) 221
Fishbein, Morris: Nature of Medical Organization (Nov.-Dec.) 471

Garibay, Manuel Sánchez: Cerebral Injuries (Jan.-Feb.) 24
Gastélum, Bernardo J.: Cesarea Extra-peritoneal en Distocias Provocadas por las Partes Blandas de la Pelvis y en Mujeres Infectadas. Part I. (Sept.-Oct.) 355
Gorman, Lt. Col. Cornelius E.: Army Rehabilitation (Sept.-Oct.) 370

GRANA, FRANCISCO: Anesthesia in War Surgery (May-June) 175
GRIFFITH, CHAS. M.: Surgical Treatment of Tuberculous and Malignant Diseases of the Respiratory System (Jan.-Feb.) 9
GUILBERT, HENRY D.: Suturing Infected Wounds of the Face (Jan.-Feb.) 44

HAYDEN, CAPT. REYNOLDS: Present Treatment of Wounds and Burns (May-June) 179
HINES, BRIG. GEN. FRANK T.: Activities of the Veterans Administration (May-June) 171
HOGAN, COMDR. BARTHOLOMEW W.: Blast Injuries (May-June) 193
HUGHES, BASIL: Classification of War Wounds. (July-Aug.) 275

KAGAN, SOLOMON R.: Dr. William Henry Welch (Mar.-Apr.) 133
KENDRICK, LT. COL. DOUGLAS B., JR.: Use of Plasma, Whole Blood and Human Serum Albumin by the Armed Forces (July-Aug.) 289
KOOK, N.: Testicular Hormones and Their Influence on Prostatic Hypertrophy (Mar.-Apr.) . 129

LANDERO, MANUEL CANSECO: Apreciaciones sobre la Pelvis de la Mujer Oaxaquena (Mar.-Apr.) 144
LEBEDENKO, VLADIMIR V.: Observations on Field Surgery (Mar.-Apr.) 92
LIU, J. HENG: Difficulties of a Chinese Army Surgeon (Jan.-Feb.) 72

MCFEE, WILLIAM D.: Physical Medicine and the Rehabilitation Problem (Sept.-Oct.) 402
MAINZER, MAJOR FRANCIS S.: Acute Cholecystitis (May-June) 241
MANDL, FELIX: Adult Tissue Extracts in Promotion of Wound Healing (Jan.-Feb.) 34
— Nearthrosis Following Comminuted Fracture of the Elbow Joint (Sept.-Oct.) 362
— Transplantation of Omentum in Closure of Cerebro-Spinal Fluid Fistula (May-June) 219
— Ulcus Callosum Recti (Hochenegg) (Nov.-Dec.) 447
MANN, REAR ADMIRAL WILLIAM L.: Naval Medical Research in Wartime (Sept.-Oct.) 349
MÁRQUEZ, M.: Argumosa's Two Methods of Blepharoplasty (Jan.-Feb.) 63
MILWIDSKY, H.: On the Occurrence of Pseudotumors in the Synovial Membrane of the Knee Joint (May-June) 227

NAGEL, CHARLES EDWARD: A Hypernephroid Tumor of the Right Kidney, with a Metastatic Lesion in the Right Scapula (May-June) 235

PAVLOVSKY, ALEJANDRO J.: Desgarro Total de la Cara Posterior e Inferior de la Vejiga Fistula Rectovaginal (July-Aug.) 308
PRUDENTE, ANTONIO: Free Muscle Transplantation in the Restoration of Lips and Cheeks (July-Aug.) 312

ROFFO, ANGEL H.: Tratamiento Electro-quirúrgico del Cáncer del Recto (May-June) 202
ROVENSTINE, E. A.: Anesthesia during the Circumstances of War (July-Aug.) 301

ST. LOUP B., ENRIQUE: Intra-abdominal Calcareous Tumors (Nov.-Dec.) 452
SANDERS, COL. LEWIS: Administrative Procedures in the Handling of the Discharge of Disabled Service Men (July-Aug.) 263
SHAAR, C. M.: Thoracic Injuries in Combat Zone (Sept.-Oct.) 365
SOTO, MARIO VERGARA: Nueva Técnica de Toracoplastia por Vía Axilar (Sept.-Oct.) 377
SPIRA, E.: Restoration of Walking Capacity after Paralysis of Trunk and Leg Muscles (Jan.-Feb.) 59

TIRADO, ALFONSO ORTIZ: Cirugía Arquitectónica de los Huesos (Jan.-Feb.) 15
TRACTENBURG, I.: Sarcomatous Degeneration of Fibroma (Mar.-Apr.) 134

VÁZQUEZ, M.: Una Modificación a la Técnica de Neumoventriculografía (Jan.-Feb.) 28

WAITT, BRIG. GEN. ALDEN H.: Gas Casualties (July-Aug.) 296
WEINTROB, LT. COMDR. MORRIS: Abnormalities of the Female Genitalia (Sept.-Oct.) 391
— Paint-Splash Cervix in Leukemia (Mar.-Apr.) 98
WILENSKY, ABRAHAM O.: Present Status of Functional Liver Tests (Jan.-Feb.) 50

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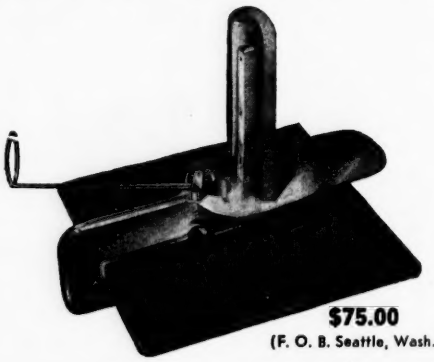

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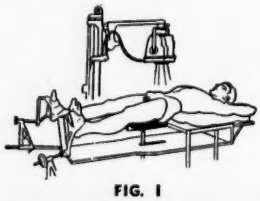

FIG. I

Fig. I—*The anterior tube is centered over the greater trochanter.*

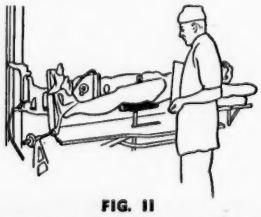

FIG. II

Fig. II—*Tube shifted from anterior to lateral position with center of tube in line with lateral x-ray director without moving either leg or disturbing drapes. Cassette Holder is placed in sterile pillow case and held very snugly above crest of the ilium directly opposite the opening of x-ray tube.*

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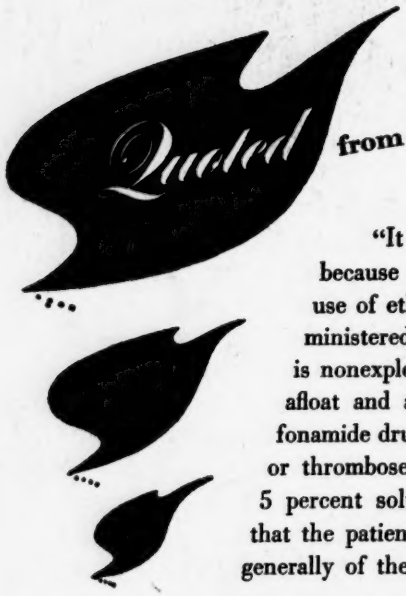

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